



- 18 Senderspeicher
- 14-Band-Graphic-Equalizer
- Doppel-Cassettendeck
- 75 Ohm Antennen-/Kabelanschluß

Best.Nr.: 0679944/01
Ger.Bez.: UNIV.STEREO-TURM

GKz: G GERAET
WGT: 659 KOMPLETTE STEREO-TUERME
KD-Sektor: R RUNDUNK
BaumNr.: 00 KEIN DIAGNOSEBAUM VORHANDEN
Klassierung: STG STEREOG., TUNER, VERST., STEUER
IFW-FehlerGru.: 205 RDF., VERST., TB., PHONO, CD, CB
Type/Privileg/Universum.Nr MODELL 3030
Beschreibung
VK-Preis: 999.00

Serviceart: 01 QUELLE-TKD
Garantie fuer Kunden 06 Monate
Sondervereinbarungen: 0 SIEHE SERVICEART

Garantiereparatur 9999999 QUELLE

KAT. **954**

DATUM **09.08.95**

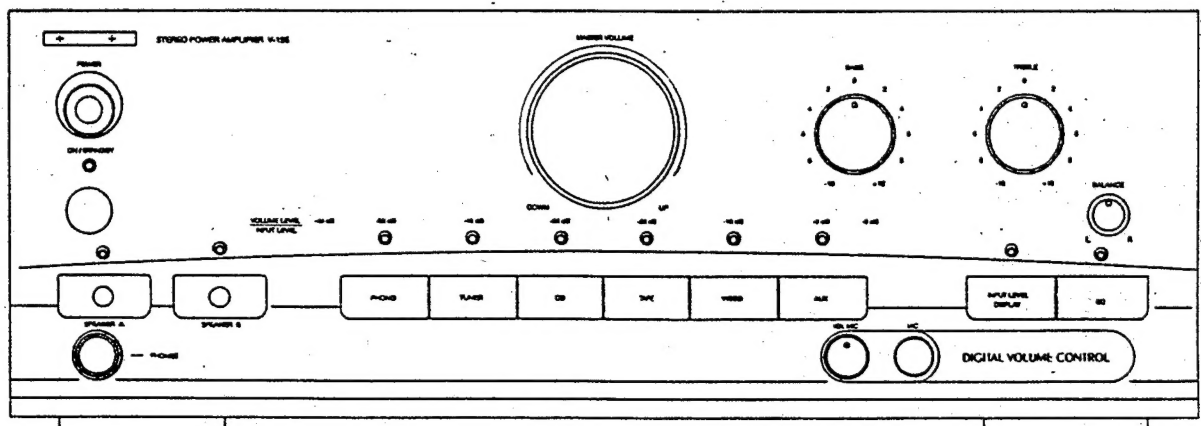
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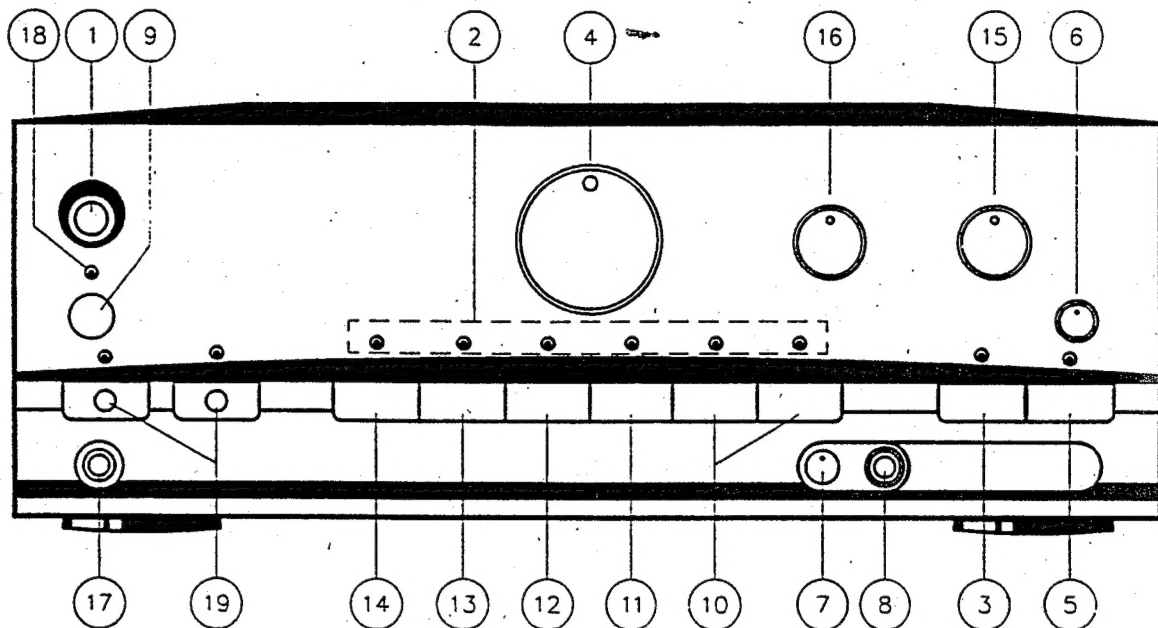
SERVICE MANUAL

STEREO POWER AMPLIFIER

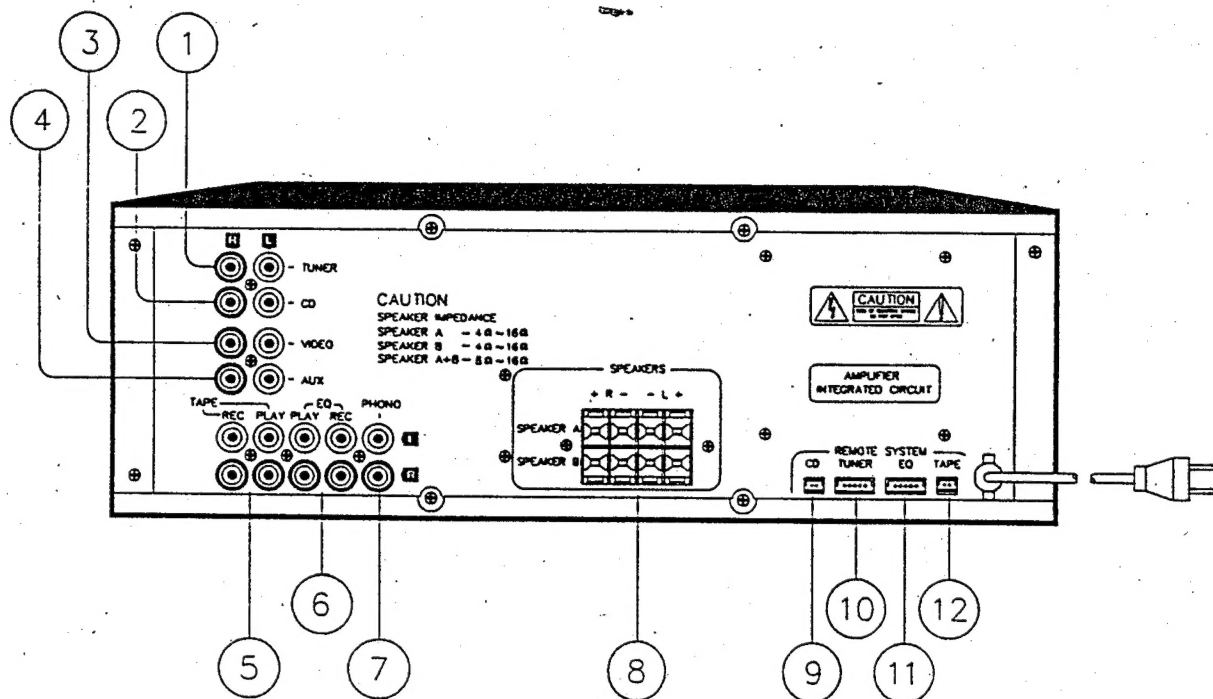


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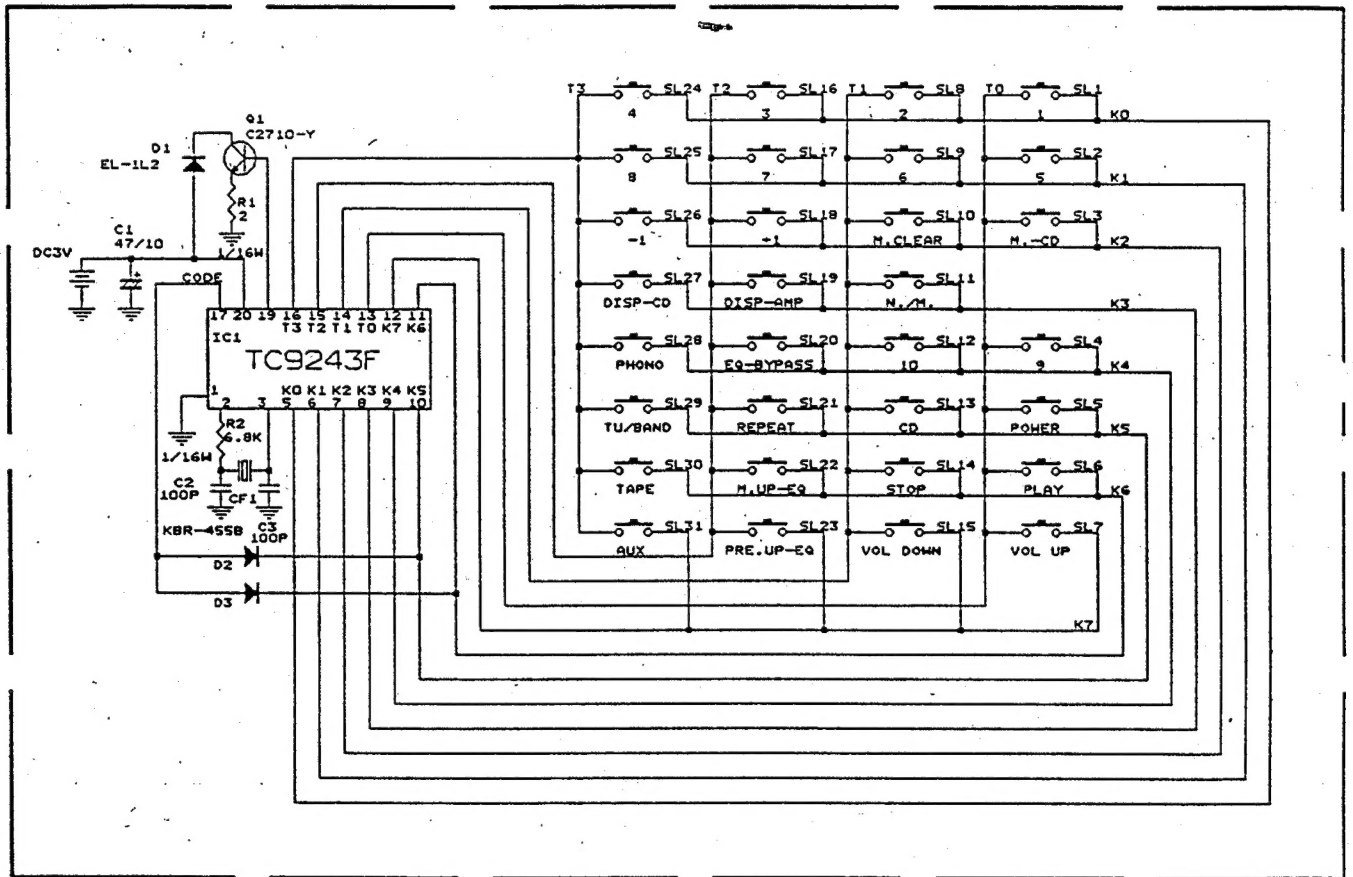
CONTROL FUNCTIONS



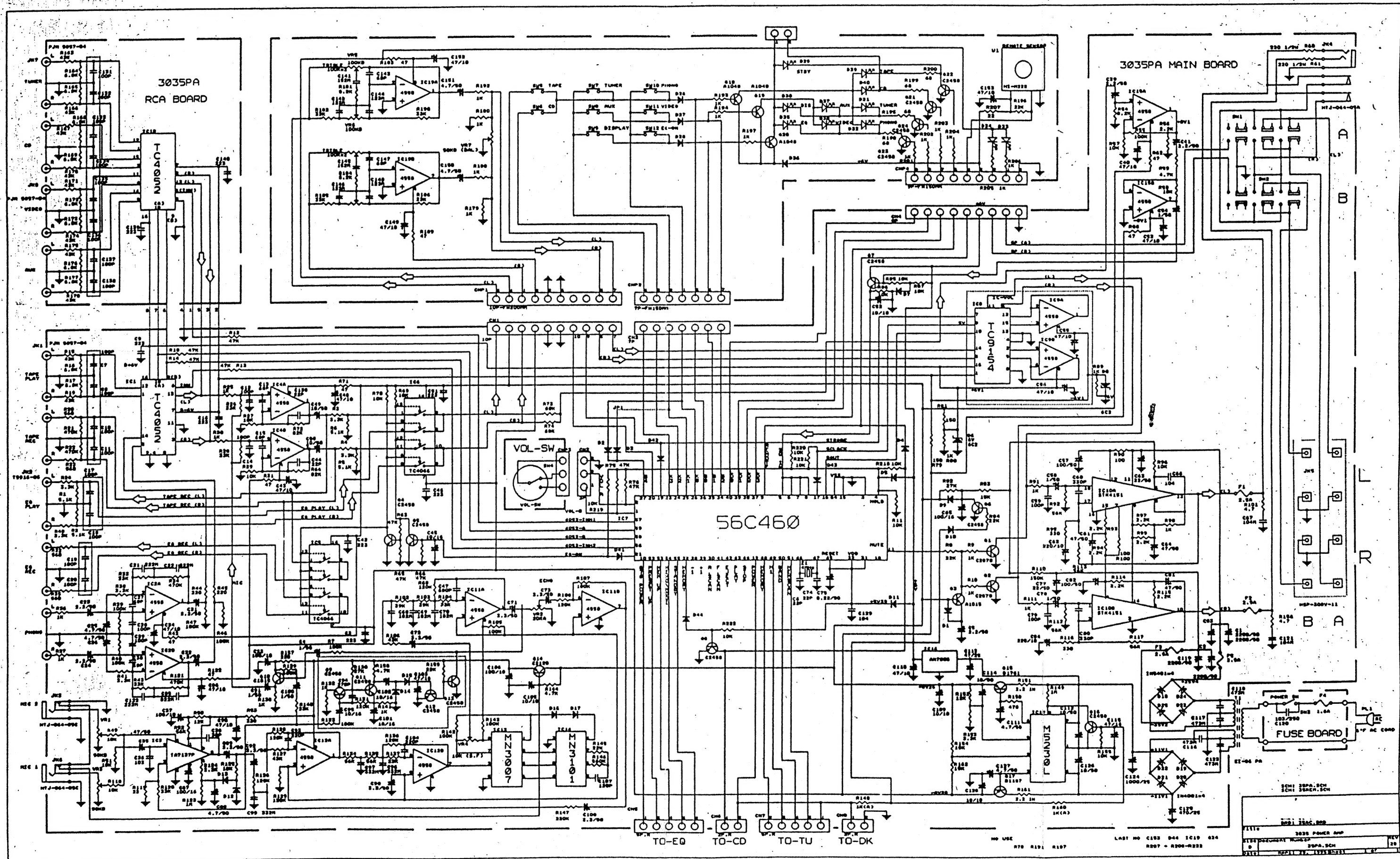
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|---|--------------------------------|
| 1. POWER SWITCH | 11. TAPE |
| 2. 3 FUNCTIONS LED DISPLAY INDICATORS | 12. CD |
| 3. INPUT LEVEL DISPLAY | 13. TUNER |
| 4. ARTIFICIAL INTELLIGENT MASTER VOLUME | 14. PHONO |
| 5. EQUALIZER SWITCH | 15. TONE CONTROL TREBLE VOLUME |
| 6. BALANCE VOLUME (L / R) | 16. TONE CONTROL BASS VOLUME |
| 7. MIC LEVEL VOLUME | 17. HEAD PHONE JACK |
| 8. MIC JACK | 18. REMOTE STANDBY INDICATOR |
| 9. REMOTE SENSOR | 19. SPEAKER SELECTION |
| 10. VIDEO AUX | |



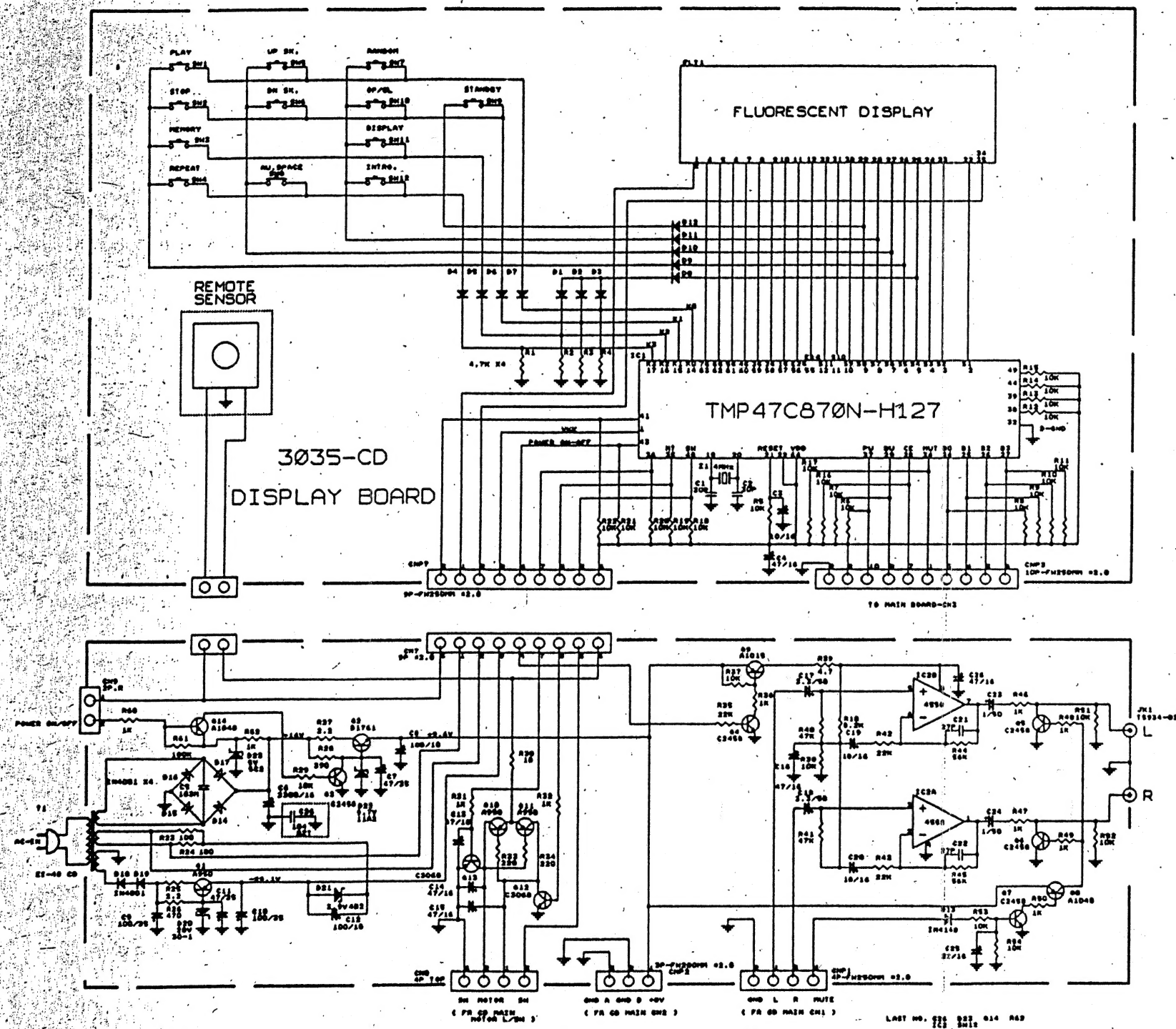
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|--|-----------------------------------|
| 1. TUNER TERMINAL | 7. PHONO TERMINAL |
| 2. CD TERMINAL | 8. SPEAKER TERMINAL |
| 3. VIDEO TERMINAL | 9. CD REMOTE SYSTEM CONNECTOR |
| 4. AUX TERMINAL | 10. TUNER REMOTE SYSTEM CONNECTOR |
| 5. TAPE (REC / PLAY) IN / OUT PUT TERMINAL | 11. EQ REMOTE SYSTEM CONNECTOR |
| 6. EQ (REC / PLAY) IN / OUT PUT TERMINAL | 12. TAPE REMOTE SYSTEM CONNECTOR |



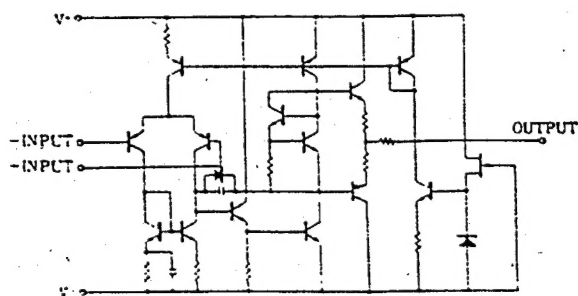
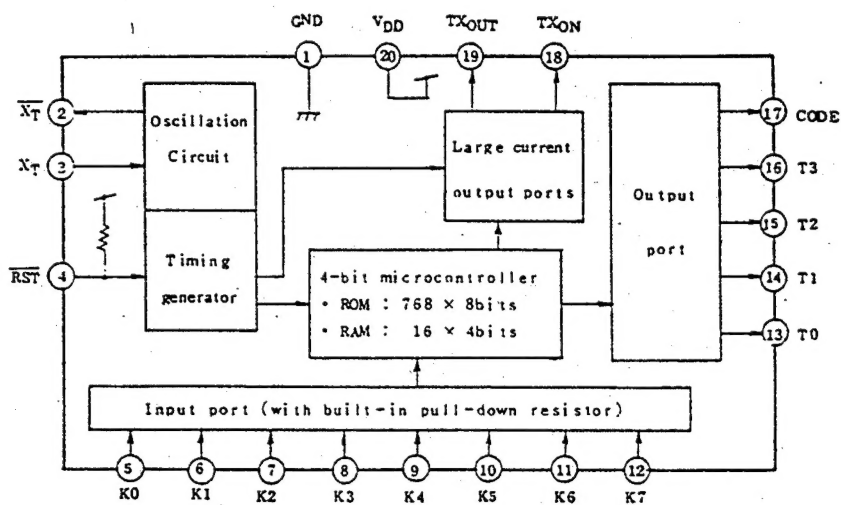
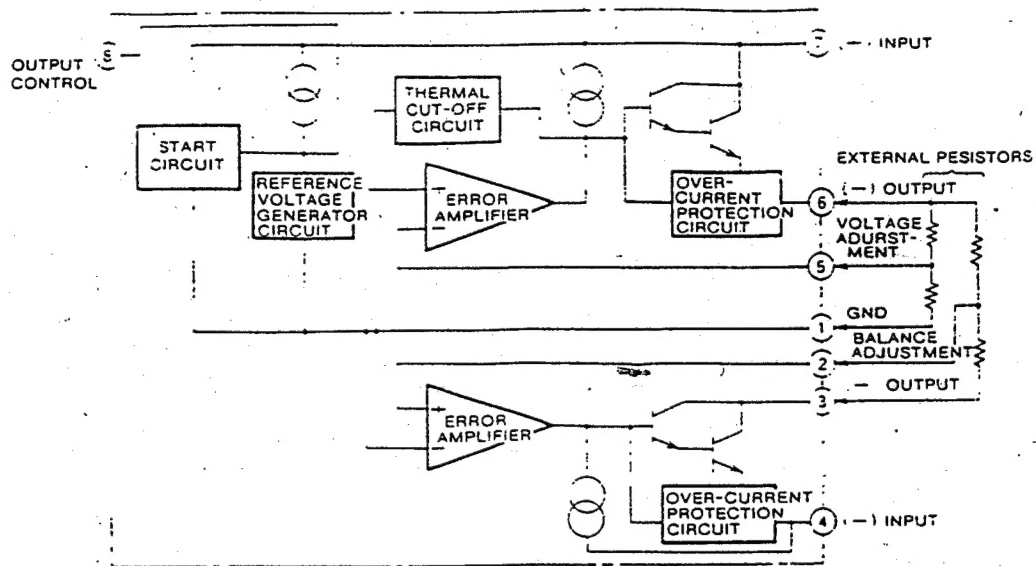
SCHEMATIC DIAGRAM



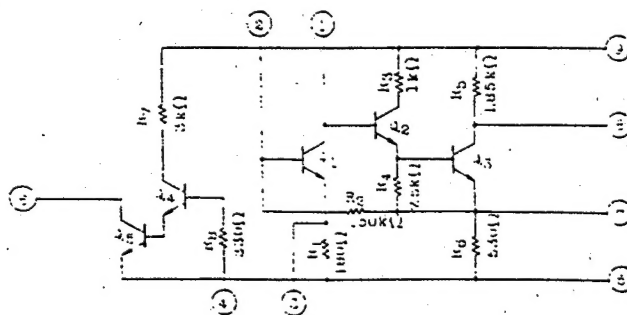
SCHEMATIC DIAGRAM



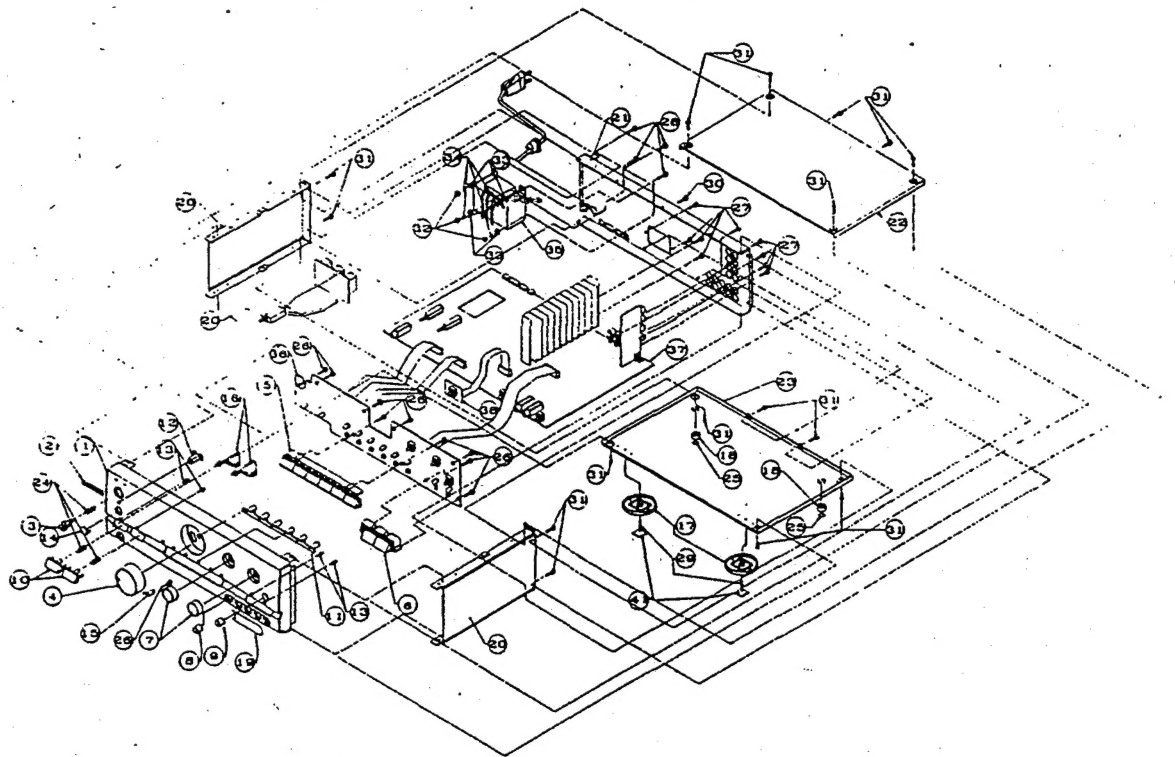
PT3035 COMPACT DISC PLAYER			
REV	0	REV	10
DATE	10/10/88	DATE	10/10/88



AN7806

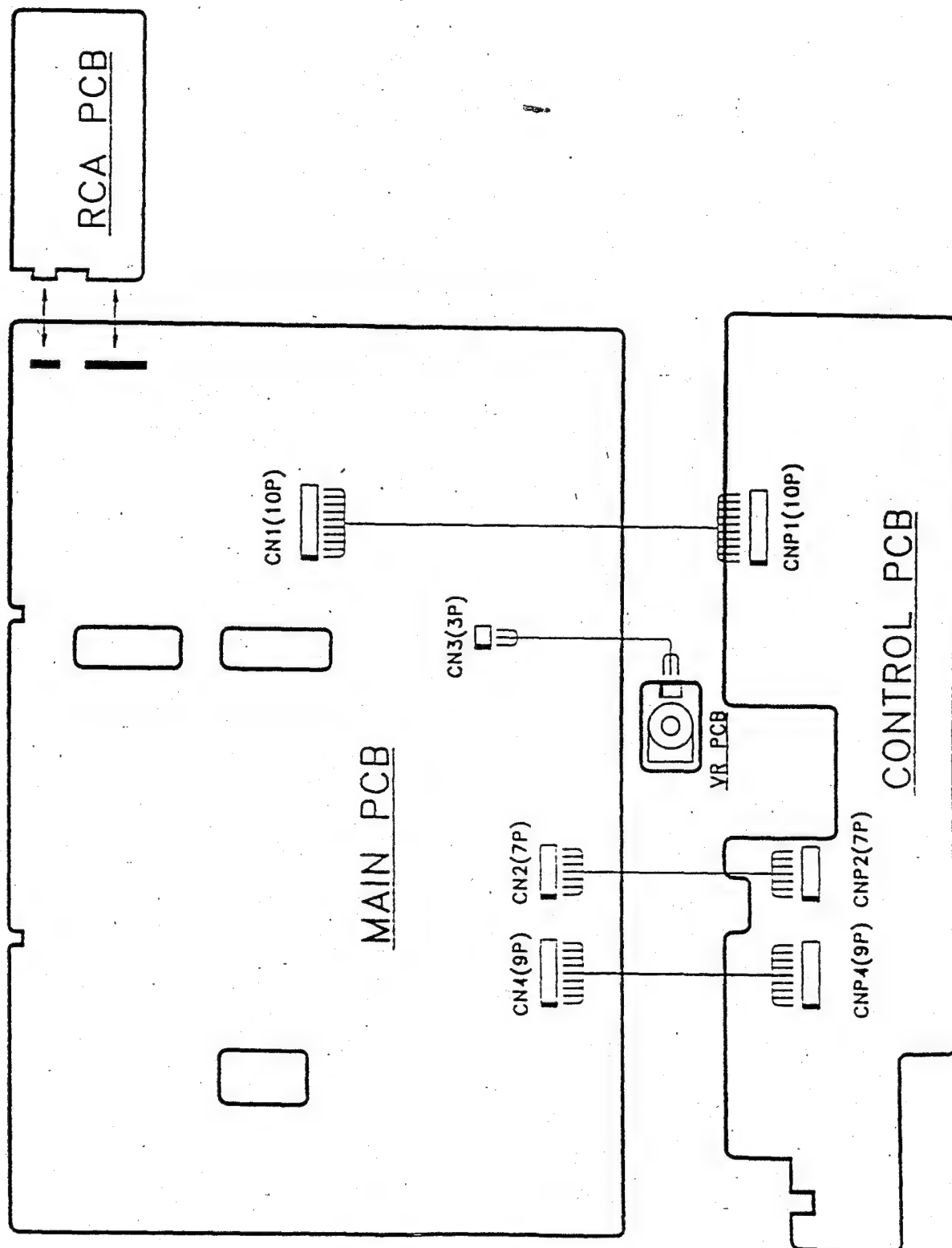


EXPLODED VIEW



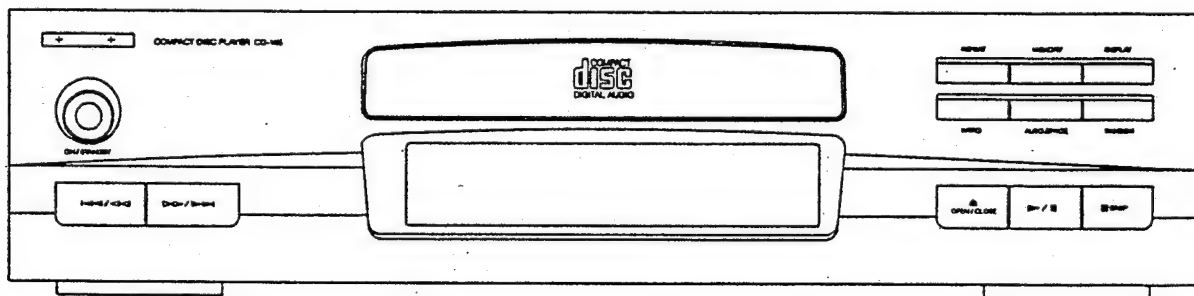
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	7035101103	AMP PANEL (V-155) (NO KARA)	1	21	8335110106	BACK COVER (AMP) (NO AC OUTLET)	1
2		BRANDNAME	1	22	6132110000	TOP COVER (AMP)	1
3	7335101000	AMP POWER KNOB	1	23	6235110000	BOTTOM COVER (AMP)	1
4	7335103000	AMP VOL KNOB	1	24	5235101000	AMP SPK SPRING (POWER, SPK2)	3
5	7335104103	AMP FUNCTION KNOB	1	25		RUBBER FOOT 12 X 12 X 2.0MM	4
6	7335105106	COMMON KNOB (AMP)	1			SCREW	
7	7335106000	AMP BASS & TREBLE KNOB	2	26		PA 2.6 X 8 (M3) (2683A)	11
8	7335107000	AMP MIC KNOB	1	27		PA 3 X 8	7
9	7335108000	AMP BAL & CASS REC KNOB	1	28	5601351001	BM 3.5 X 10 (FOR TRANSFORMER)	4
10	7335110000	AMP PUSH- KNOB (SPK)	2	29		BTB 3 X 4.5	2
11	7435101000	AMP FUNCTION KNOB LENS (TRANSPARENT)	1	30	5602300602	BTB 3 X 6 9C	8
12	7435102000	AMP STANDBY LED LENS (TRANSPARENT)	1	31		BTB 3 X 6 (BLACK) (FOR CHASSIS)	16
13	7435103000	AMP SPK DISPLAY KNOB LED LENS (TRANSPARENT)	4	32	5710350253	NUT : M3.5 (FOR TRANSFORMER)	4
14	7435104000	AMP SENSOR LENS (PURPLE)	1	33	5432109000	METAL WASHER D3.5 X 8 X 1MM	4
15	7435105000	AMP VOL KNOB LENS (TRANSPARENT)	1	34	5432106000	SPRING WASHER 3.5	4
16	7935102000	AMP SPK SW-STICK	2	35		TRANSFORMER	1
17	7935102201	FRONT FOOT (GOLDEN)	2	36		CONTROL PCB	1
18	7935105000	REAR FOOT	2	37		MAIN PCB	1
19	7635101102	MIC CUTSHEET (DIGITAL VOLUME CONTROL)	1	38		VOL PCB	1
20	6435110000	SIDE COVER (DECK & AMP)	2				

WIRING DIAGRAM



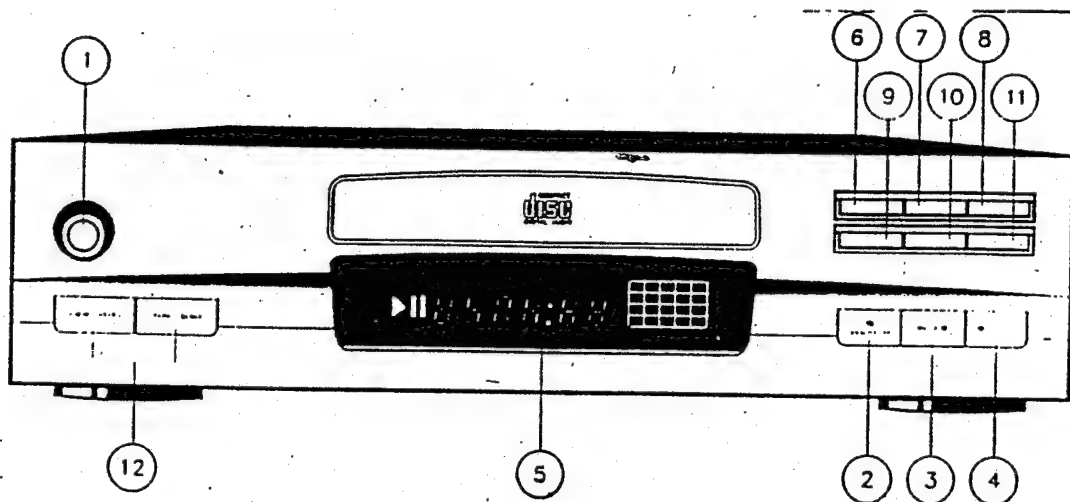
SERVICE MANUAL

COMPACT DISC PLAYER



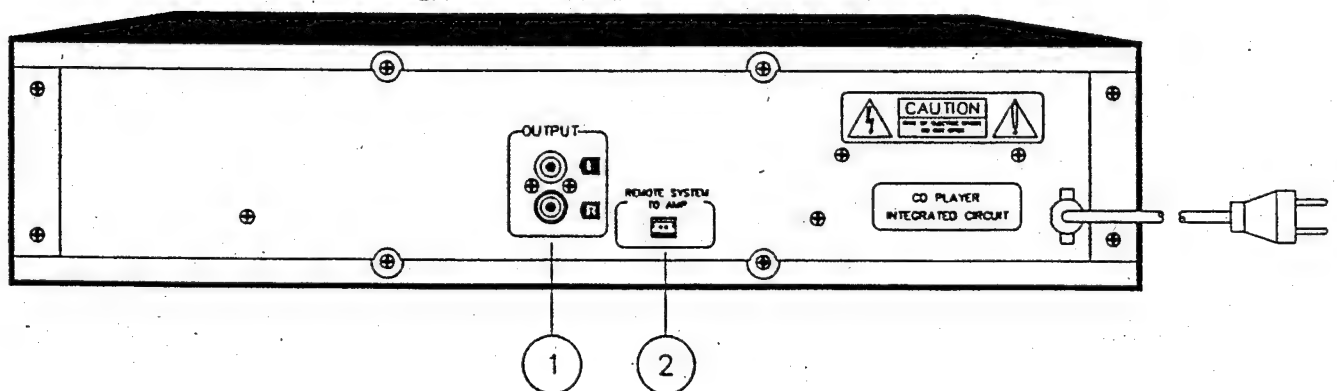
CD - 155

CONTROL FUNCTIONS



1. ON / STANDBY SWITCH
2. OPEN / CLOSE
3. PLAY / PAUSE
4. STOP
5. MUSICAL CALENDER
6. PEPEAT

7. MEMORY
8. DISPLAY
9. INTRO
10. AUTO SPACE
11. RANDOM
12. FastFWD, FastBWD



1. OUTPUT L / R TERMINAL

2. CD TO AMP REMOTE SYSTEM CONNECTOR

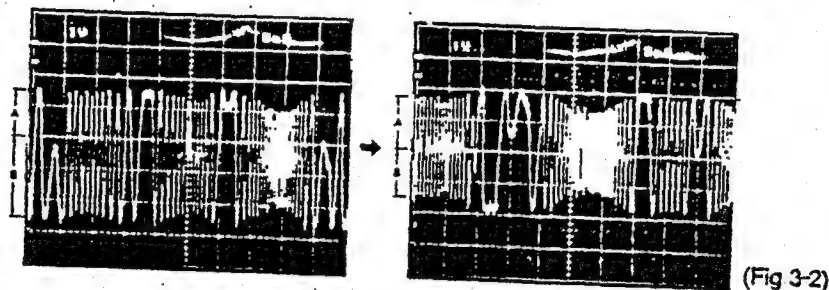
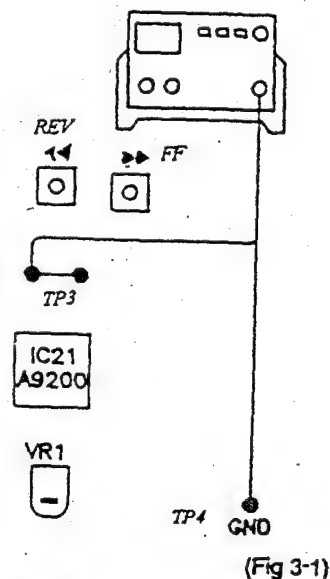
SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields etc.,

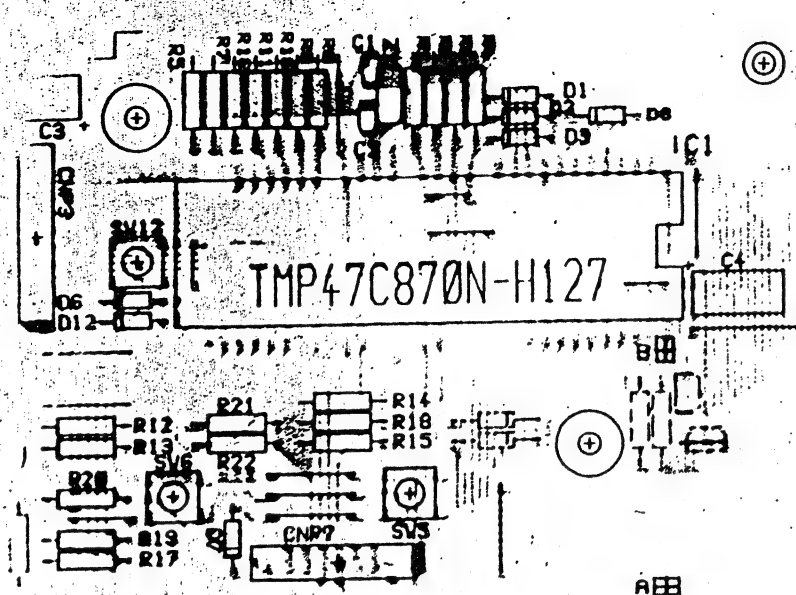
MEASUREMENTS AND ADJUSTMENTS

TRACKING BALANCE ADJUSTMENT

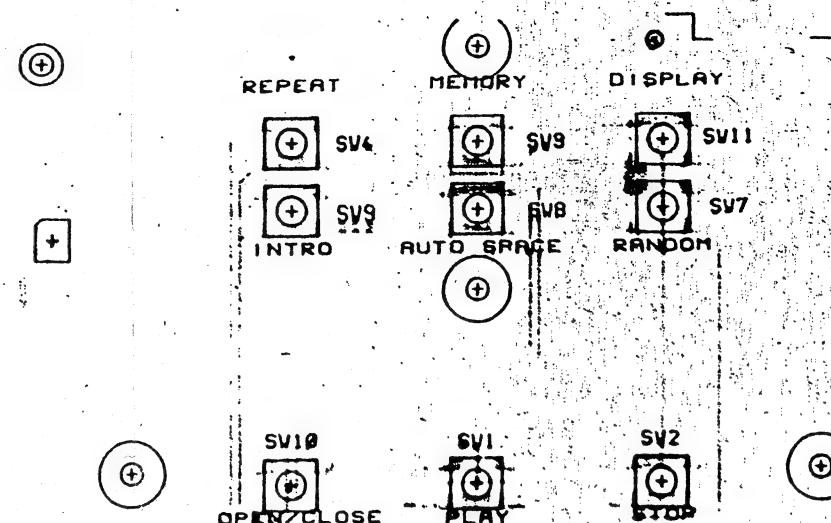
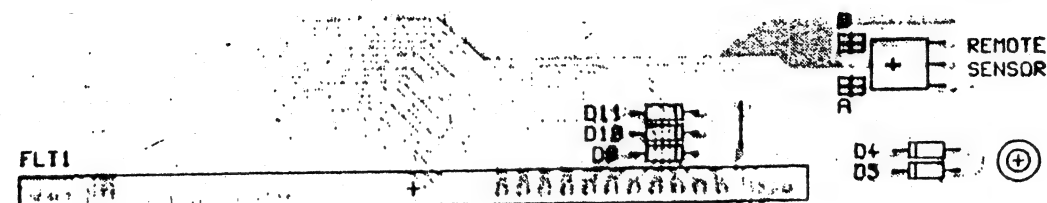
1. Position the baseline trace of the oscilloscope to the center horizontal graticule line oscilloscope setting:
 VOLT 1V / Div
 SWEEP 2m / sec
 INPUT COUPLING DC
2. Turn on the power switch and play the track 1 of test disc.
3. Connect the oscilloscope to TP3 (See Fig 3-1) and TP4 (Gnd)
4. Press the skip FF or REV using oscilloscope, adjust the VR1 so that A=B (See Fig 3-2)



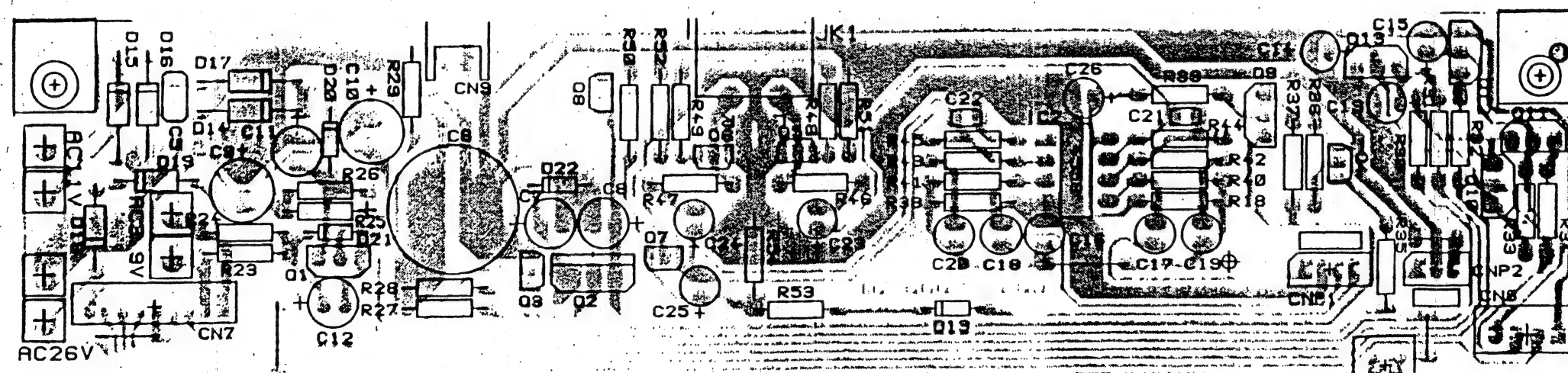
5. When the display : press the play button again and repeat procedure (4).



FORTEX IND LTD PRINTOUT: 0.7
3035 CD DISP BOARD
SIZE 350 X 71.5 X 1.6MM
BRD 35CF.BRD
PN 0035-5010-02
DATE 10 MAR 95



CONTROL PCB

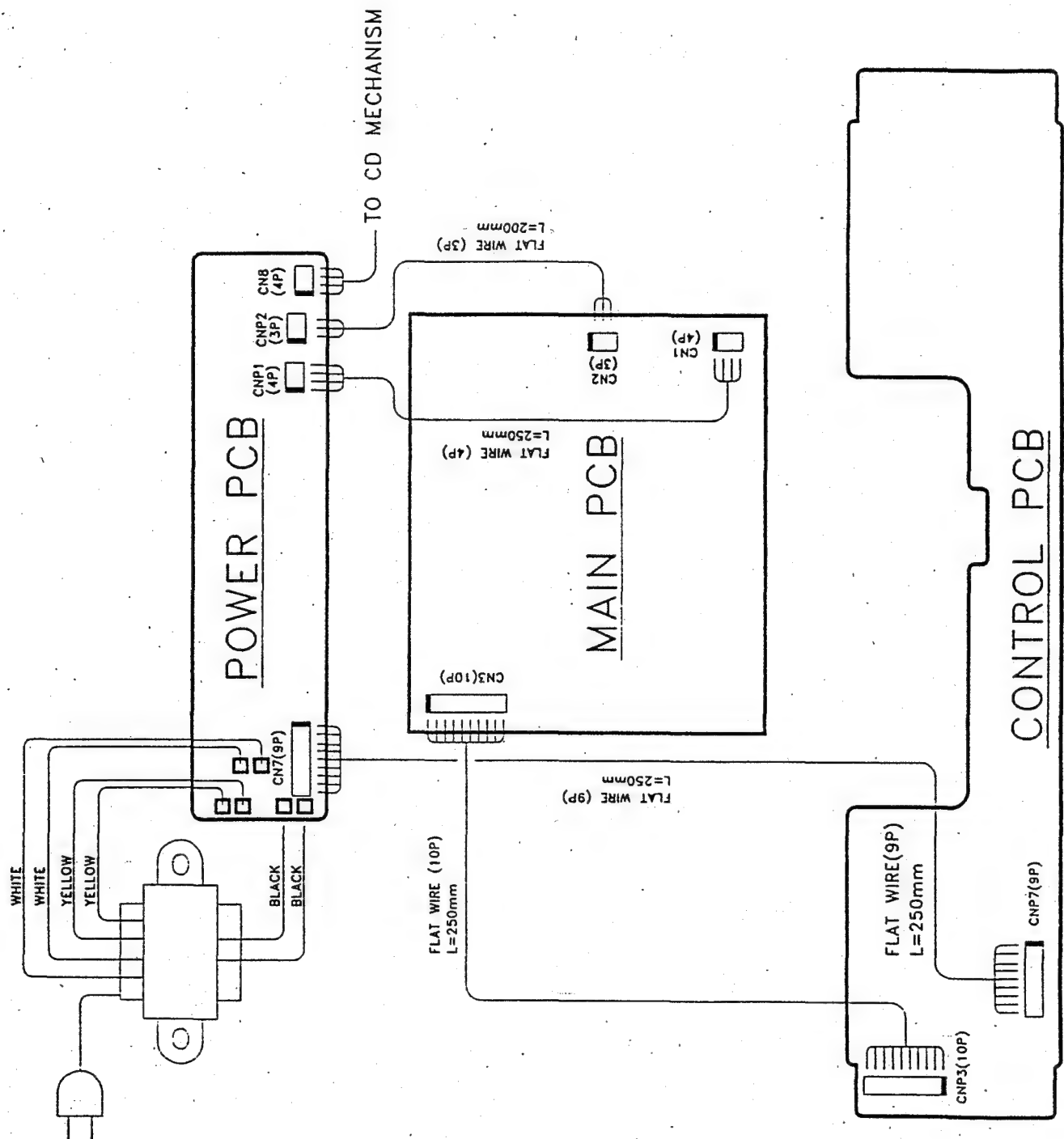


POWER PCB

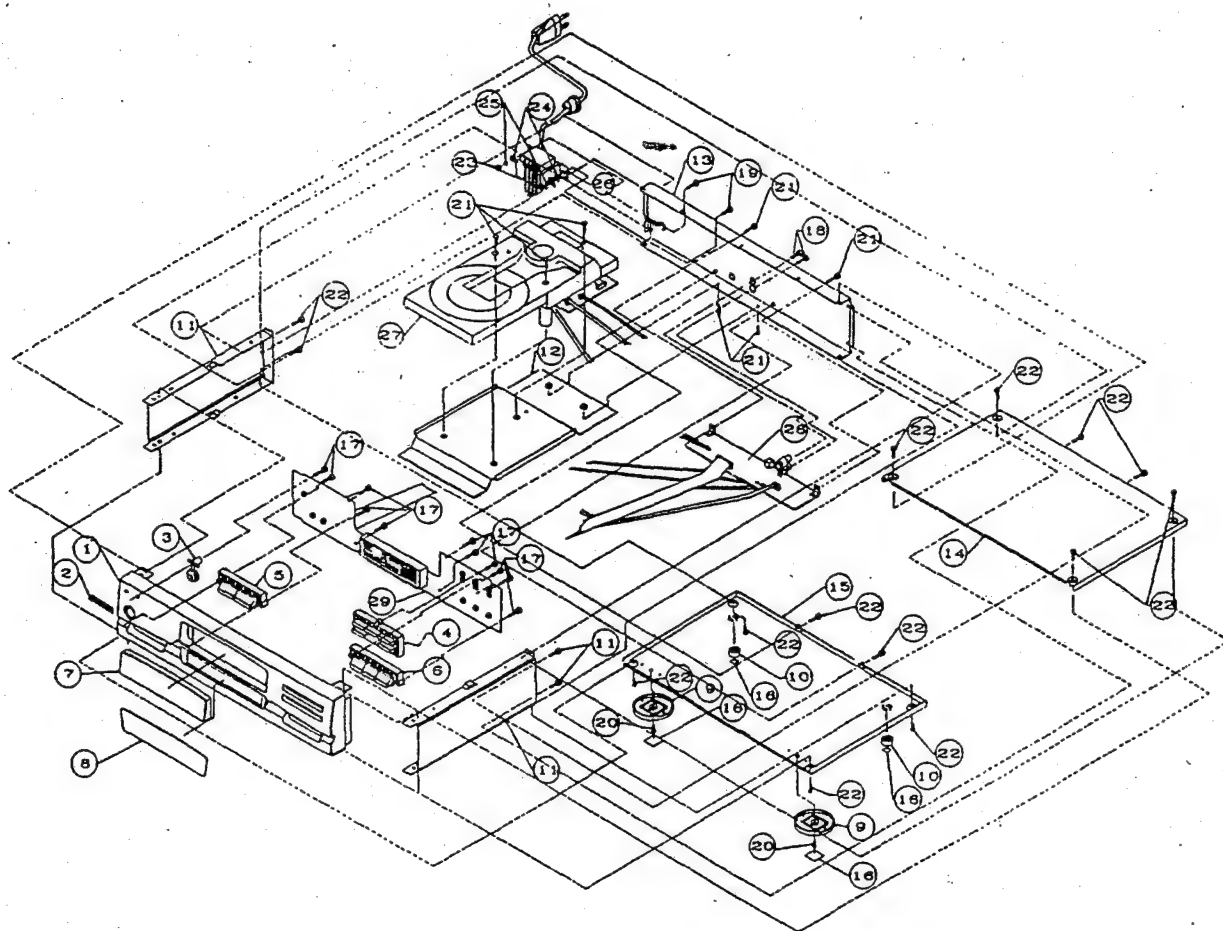
SCHEMA' 2 DIAGRAM



WIRING DIAGRAM

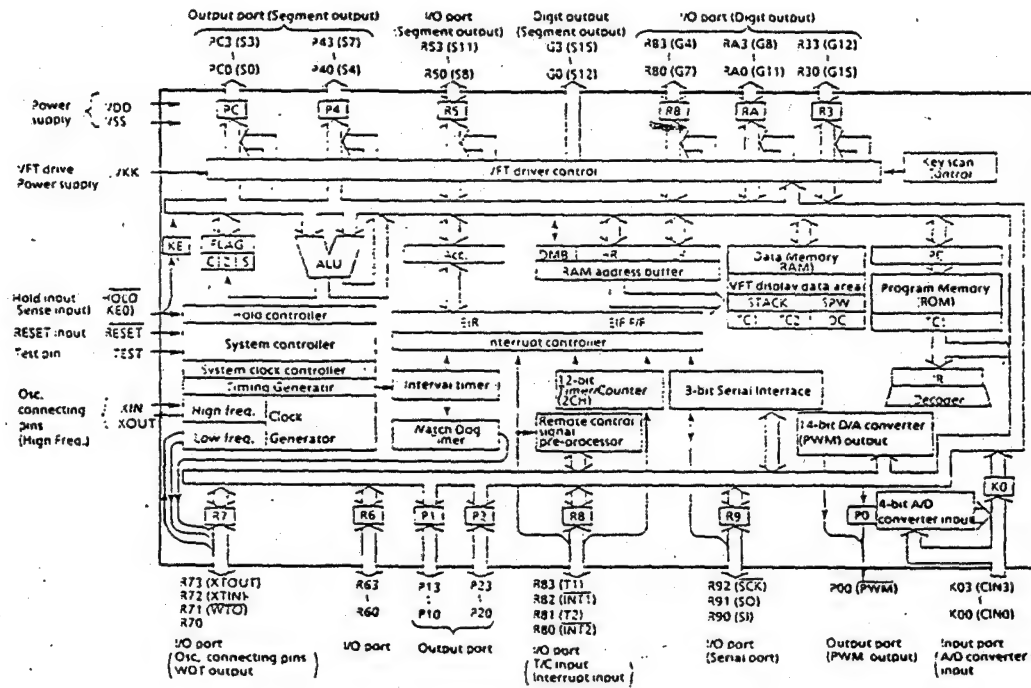


EXPLODED VIEW

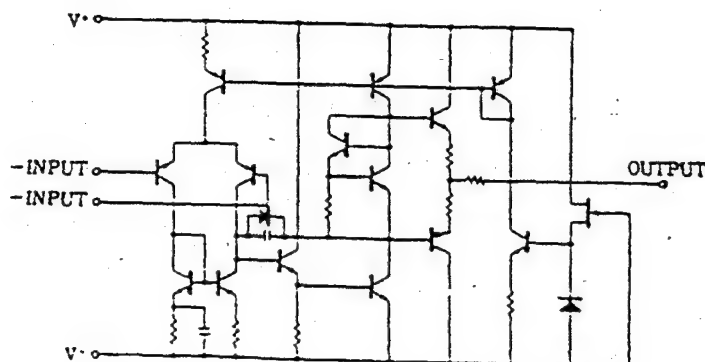


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	7035501103	CD PANEL (CD-155)	1	16		RUBBER FOOT 12 X 12 X 2.0MM	4
2		BRANDNAME	1	17		SCREW	
3	7335501000	CD POWER KNOB	1	18		PA 2.6 X 8 (M3) (2683A)	11
4	7335502000	CD FUNCTION KNOB	1	19		PA 3 X 8	2
5	7335503102	CD KNOB (FF/REW)	1	20	5601300801	BM 3 X 8 (FOR TRANSFORMER)	2
6	7335504102	CD PLAY KNOB	1	21		BTB 3 X 4.5	2
7	7235501201	CD DOOR COVER	1	22	5602300602	BTB 3 X 6 BC	9
8	7435501401	CD LENS (PURPLE)	1	23		BTB 3 X 6 (BLACK) (FOR CHASSIS)	16
9	7935102201	FRONT FOOT (GOLDEN)	2	24	5701300253	NUT : M3 (FOR TRANSFORMER)	2
10	7935105000	REAR FOOT	2	25	5432101000	METAL WASHER D3 X 8 X 1MM (FOR TRANSFORMER)	2
11	6432310000	SIDE COVER (CD,EQ & TUNER)	2	26	5432105000	SPRING WASHER O 3 (FOR TRANSFORMER)	2
12	6535510000	CD SUPPORT BRACKET	1	27		TRANSFORMER	1
13	6325510106	BACK COVER (CD)	1	28		CD MECHANISM	1
14	6132210000	TOP COVER (CASS,TUNER,EQ & CD)	1	29		POWER PCB	1
15	6235210000	BOTTOM COVER (CASS,TUNER,CD)	1			CONTROL PCB	1

SEMICONDUCTOR INSTRUCTION



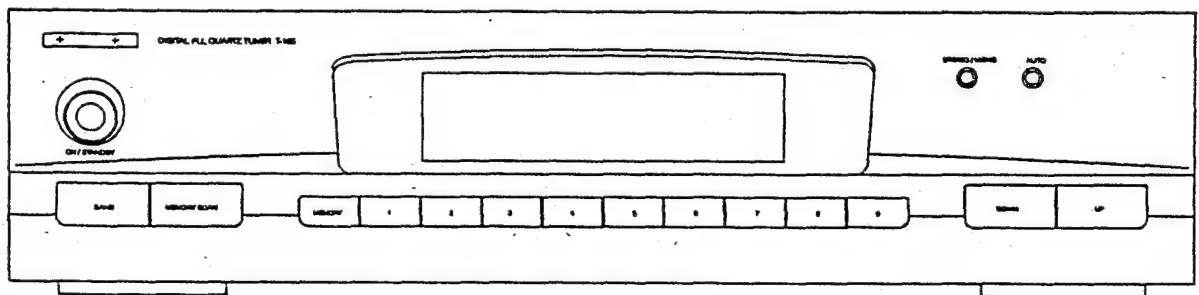
TMP 47C870



4558

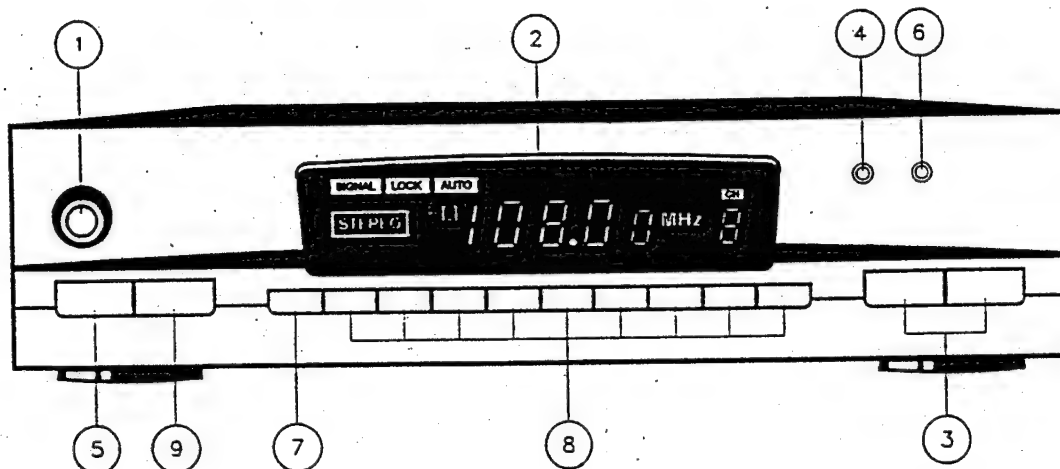
SERVICE MANUAL

DIGITAL PLL QUARTZ TUNER

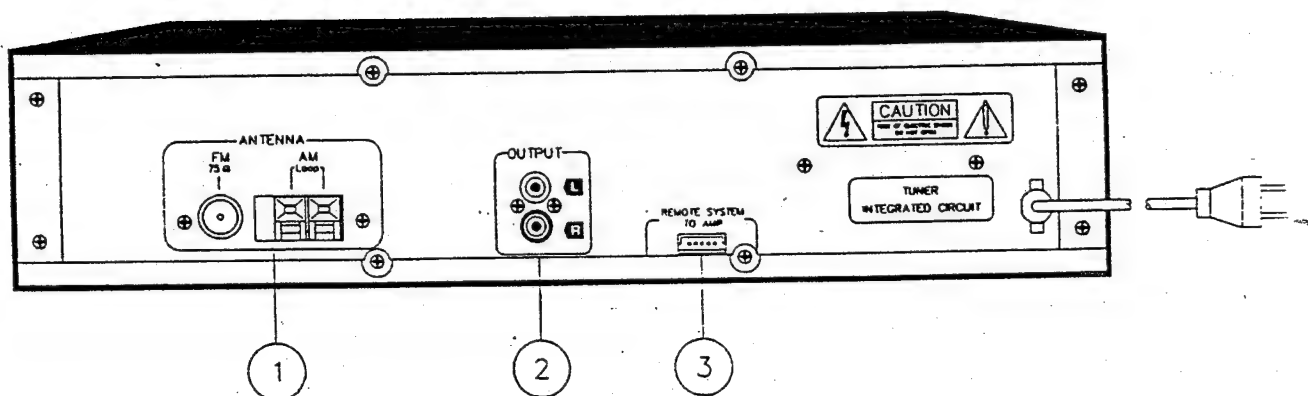


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CONTROL FUNCTIONS



- | | |
|-------------------------------------|----------------------------|
| 1. ON / STANDBY SWITCH | 6. AUTO SEARCH SWITCH |
| 2. COLOR DIGIAL FLUORESCENT DISPLAY | 7. MEMORY SWITCH |
| 3. TUNING SWITCH (UP OR DOWN) | 8. PRESET STATION SWITCHES |
| 4. FM STEREO / MONO SWITCH | 9. MEMORY SCAN SWITCH |
| 5. BAND SWITCH | |



- | | |
|--|---|
| 1. FM 75 Ω ANTENNA AMPLIFIER
AM LOOP ANTENNA AMPLIFIER | 3. TUNER TO AMP REMOTE SYSTEM CONNECTOR |
| 2. OUTPUT L / R TERMINAL | |

SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields etc..

MEASUREMENTS AND ADJUSTMENTS

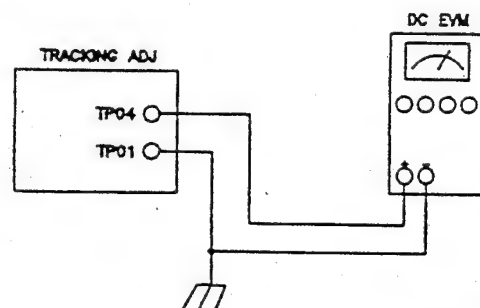
MW / FM

Control positions and equipment used

- MW and FM signal generator (MW and FM-SG).
- Stereo modulator.
- Distortion analyser.
- Oscilloscope.
- AF Oscillator.
- AC and DC electronic voltmeter (EVM)
- Frequency counter.

TUNING FREQUENCY RANGE ADJUSTMENT

1. Test equipment connection is shown in figure 1.
2. Set the unit to the desired band (FM, MW)
3. Place the radio frequency to 108MHz for FM, 522KHz for MW.
4. Adjust L7 for FM, T1 for MW so that the DC voltage is 8.0V for FM, 1.2V for MW.



(FIG.1)

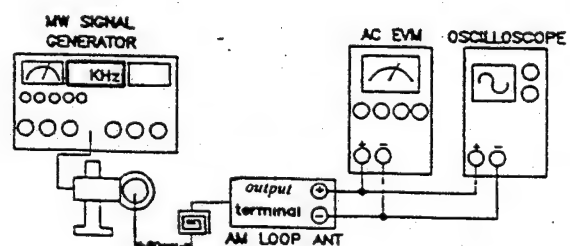
MW RF ADJUSTMENT

1. Test equipment connection is shown in figure 2.
2. Set the unit to "MW" position.
3. Place the radio frequency display and signal generator setting to 612 KHz.
4. Adjust T2 for MW for maximum output.
5. Place the radio frequency display and signal generator setting to 1503KHz.
6. Adjust TC1 for maximum output.
7. Repeat steps 3-6.
8. Adjust T3 for MW for maximum out put.

Note: Antenna input level must be as low as possible being free from AGC.

MW SIGNAL GENERATOR CONDITION

Modulation 30%
Modulation frequency 1KHz



(FIG.2)

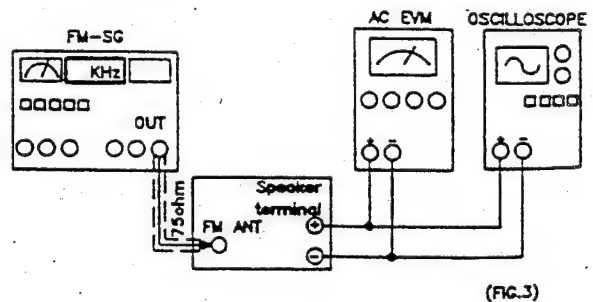
FM RF ADJUSTMENT

1. Test equipment connection is shown in figure 3.
2. Place unit into "FM" position.
3. Place the radio frequency display and signal generator setting to 100.1MHz, add weak input so that noise is included in the output waveform.
4. Adjust L2, L4, L5, L6 for maximum output.

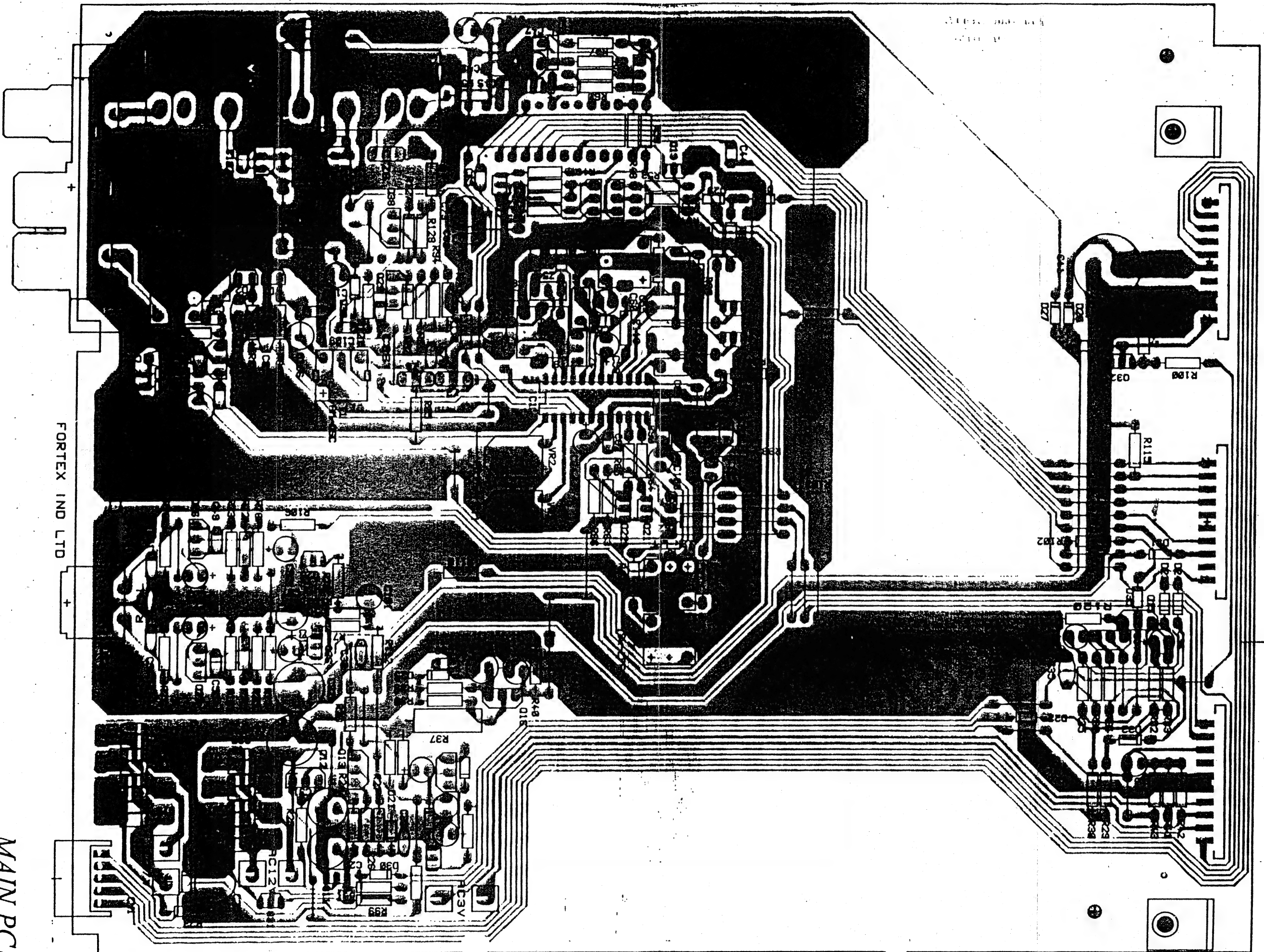
Note: As three output reading will be present, adjustments must be made at center frequency.

FM SIGNAL GENERATOR CONDITION

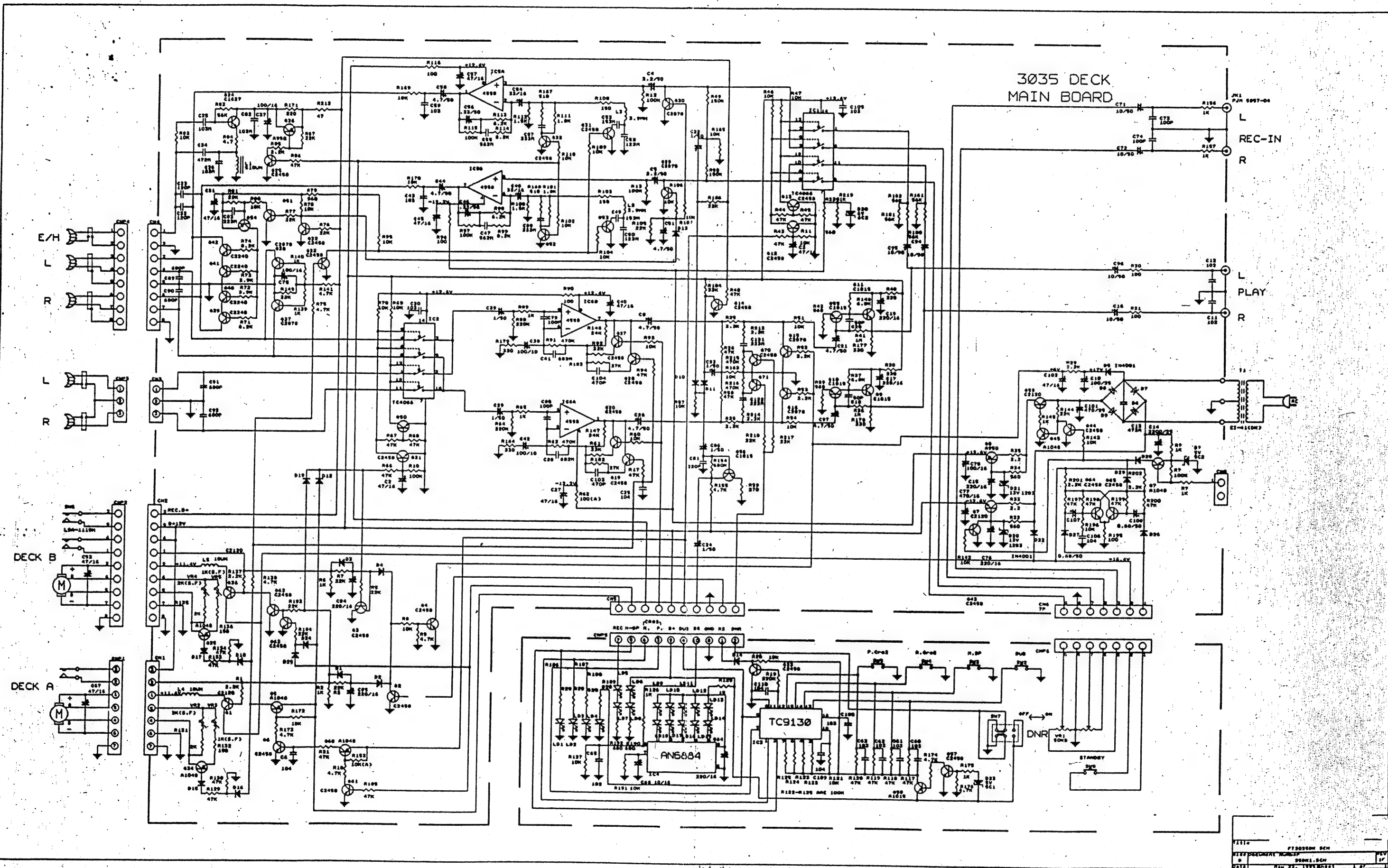
Modulation 100%
 Modulation frequency 1KHz
 Output level 66dB



PRINTED CIRCUIT BOARDS DIAGRAM

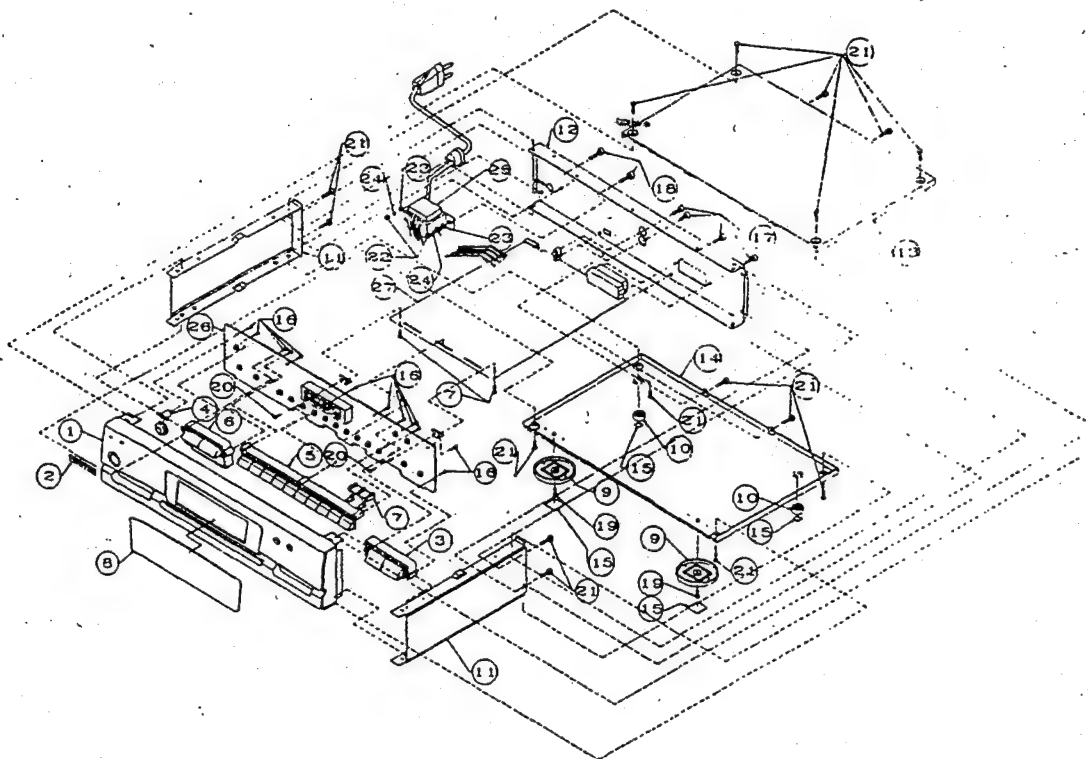


SCHEMATIC DIAGRAM



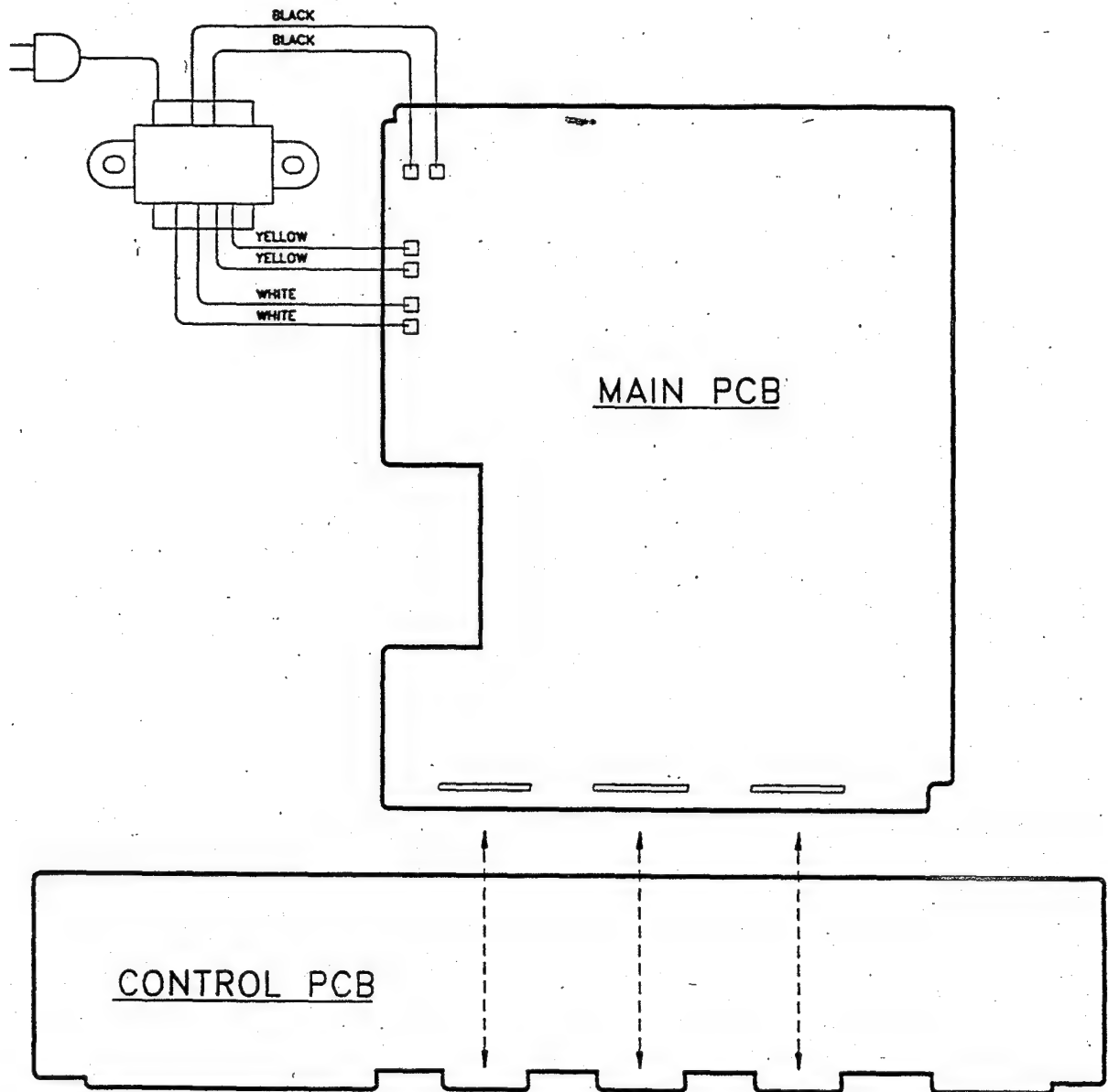
FILE: 07365 SCH
 DATE: 1978-10-11
 DRAWN BY: J. J. JONES
 CHECKED BY: J. J. JONES
 APPROVED BY: J. J. JONES

EXPLODED VIEW



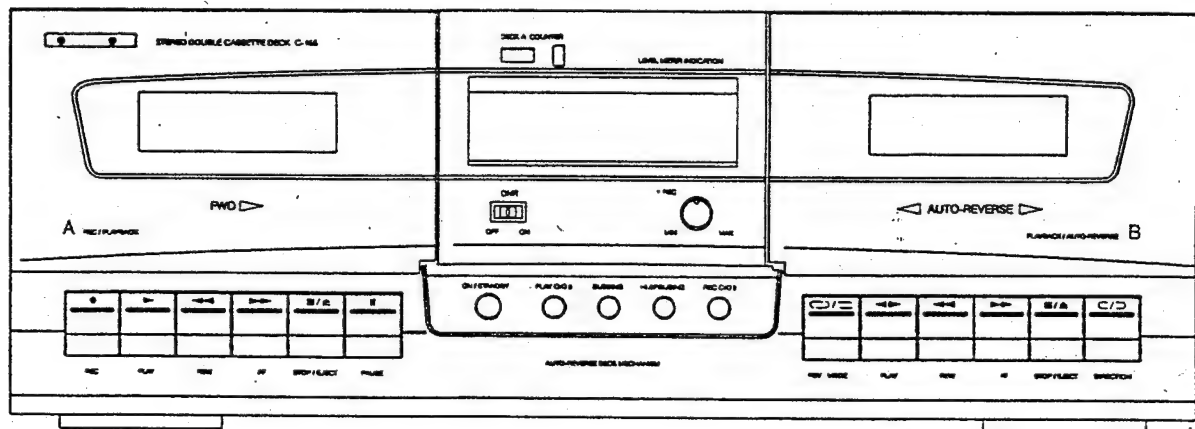
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	7035301103	TU PANEL (T-155)	1	15		RUBBER FOOT 12 X 12 X 2.0MM	4
2		BRANDNAME	1	16		PA 2.6 X 8 (M3) (2683A)	12
3	7335105107	COMMON KNOB (TU-UP/DOWN)	1	17		PA 3 X 8	4
4	7335301000	POWER KNOB (TU, EQ)	1	18	5601300801	BM 3 X 6 (FOR TRANSFORMER)	2
5	7335302102	TU PRESET KNOB	1	19		BTB 3 X 4.5	2
6	7335303102	TU MEMORY KNOB	1	20	5602300602	BTB 3 X 6 BC	4
7	7335304000	TU AUTO KNOB	1	21		BTB 3 X 6 (BLACK) (FOR CHASSIS)	16
8	7435301401	TU LENS (PURPLE)	1	22	5701300253	NUT : M3 (FOR TRANSFORMER)	2
9	7935102201	FRONT FOOT (GOLDEN)	2	23	5432101000	METAL WASHER D3 X 8 X 1MM (FOR TRANSFORMER)	2
10	7935105000	REAR FOOT	2	24	5432105000	SPRING WASHER 0.3 (FOR TRANSFORMER)	2
11	6432310000	SIDE COVER (CD, EQ & TUNER)	2	25		TRANSFORMER	1
12	6335310106	BACK COVER (TUNER) (75 OHM)	1	26		CONTROL PCB	1
13	6132210000	TOP COVER (CASS, TUNER, EQ & CD)	1	27		MAIN PCB	1
14	6235210000	BOTTOM COVER (CASS, TUNER, CD)	1				

WIRING DIAGRAM



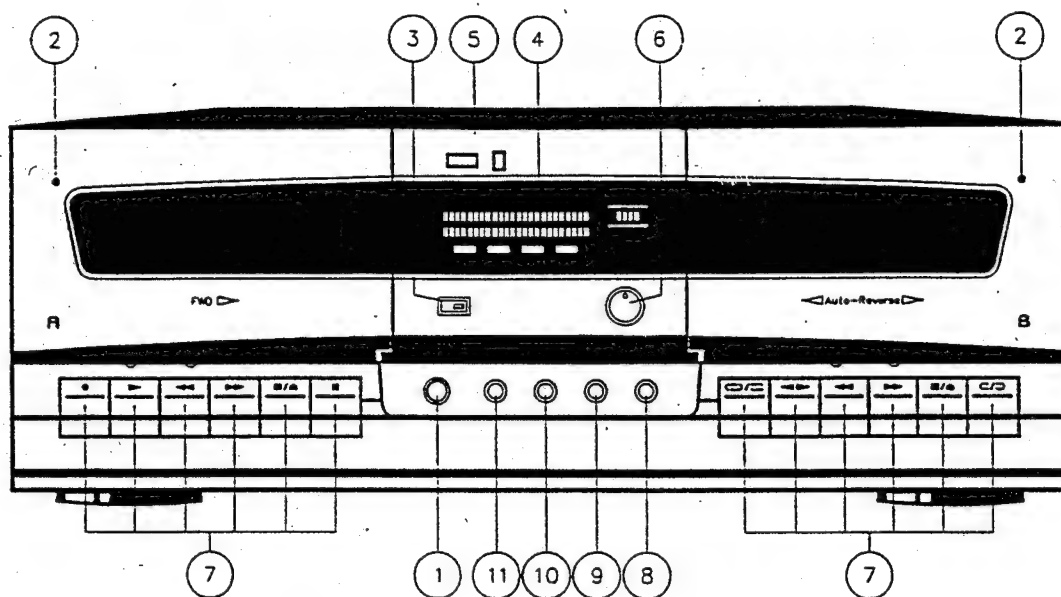
SERVICE MANUAL

STEREO DOUBLE CASSETTE DECK

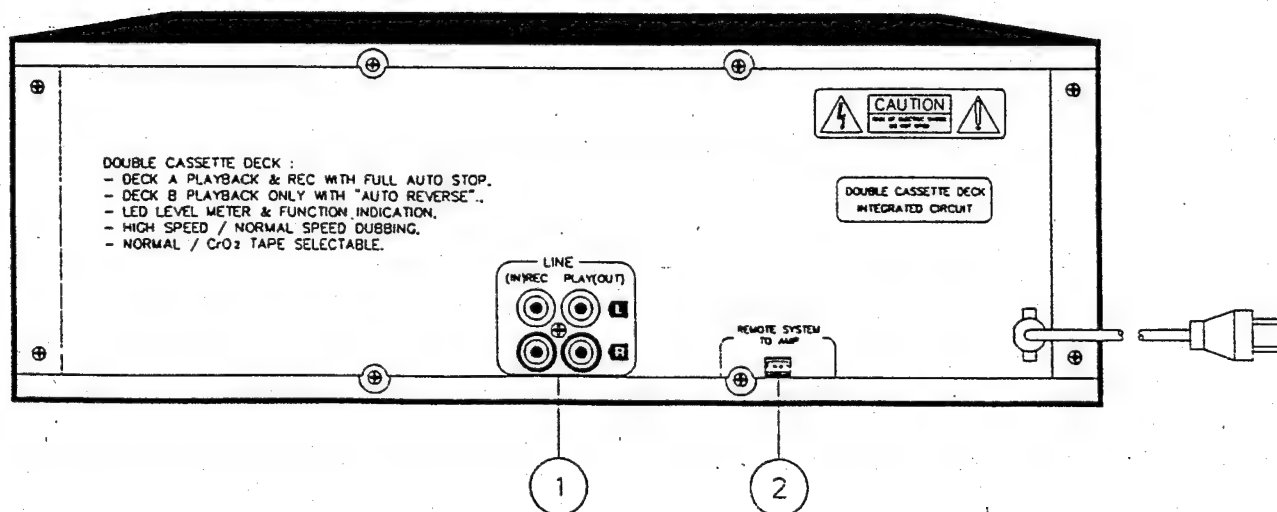


C - 155

CONTROL FUNCTIONS



- | | |
|---|--|
| 1. ON / STANDBY SWITCH | 7. CASSETTE OPERATION BUTTON |
| 2. CASSETTE HOLDER | 8. REC CrO ₂ SWITCH |
| 3. DYNAMIC NOISE REDUCTION | 9. HIGH SPEED DUBBING SWITCH |
| 4. PEAK LEVEL INDICATOR | 10. DUBBING SWITCH |
| 5. TAPE COUNTER AND RESET BUTTON (DECK B) | 11. PLAY CrO ₂ / METAL SWITCH |
| 6. REC LEVEL SWITCH | |



- | | |
|--|--|
| 1. REC (IN) / PLAY (OUT) LINE TERMINAL | 2. TAPE TO AMP REMOTE SYSTEM CONNECTOR |
|--|--|

SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields etc.,

MEASUREMENTS AND ADJUSTMENTS

*CASSETTE

MEASUREMENT CONDITION:

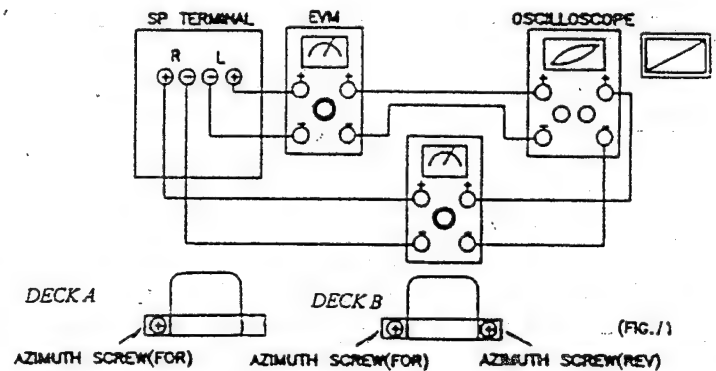
- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.

*TEST TAPE :

- Head azimuth adjustment (10KHz, -10dB)
: MTT-114N.
- Tape speed adjustment (3KHz, -10dB)
: MTT-111N.
- Normal reference blank : MTT-5511

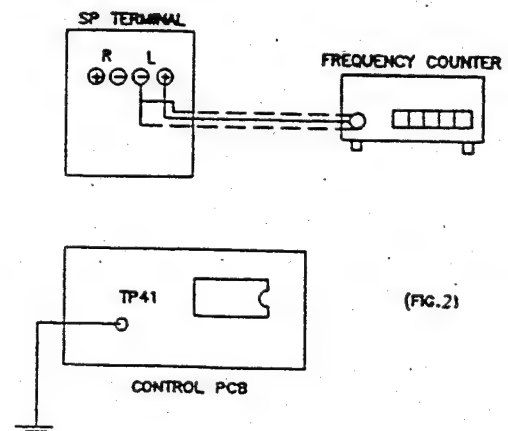
HEAD AZIMUTH ADJUSTMENT (DECK A, B)

1. Test equipment connection is shown in figure 1.
2. Playback the azimuth adjusted part (10KHz, -10dB) of the test tape (MTT-114N) and regulate the angle adjusting screw so that the outputs of L-ch and R-ch are maximized.
(When the adjusting positions are different with L-ch and r-ch, find an position where are the outputs of L-ch and R-ch are balanced, and the mark the adjustment.)
3. At the same time, draw a lissajous waveform and eliminate phase deflection.
4. After the adjustment, apply screw-lock to the angle adjusting value.

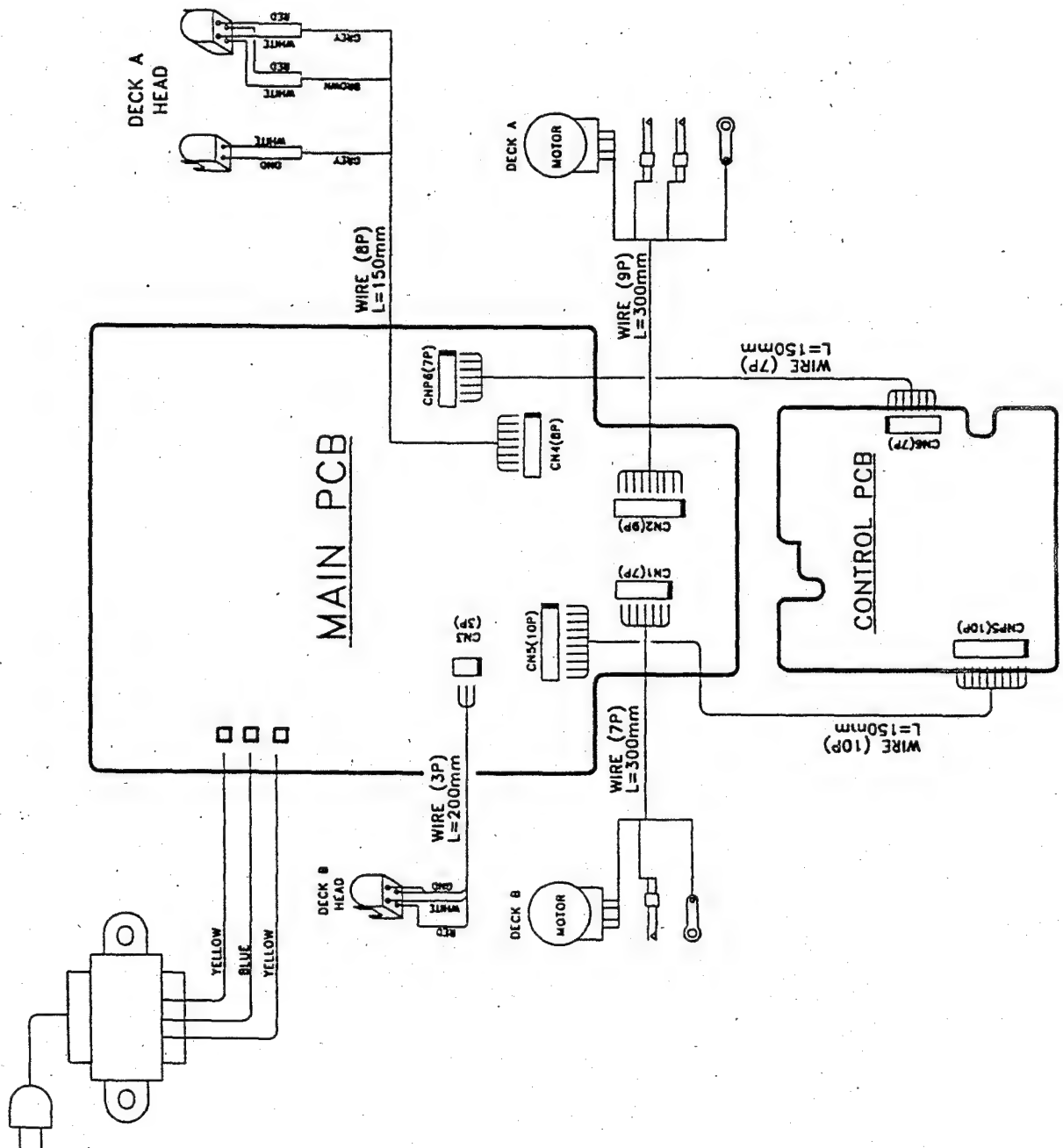


TEST SPEED ADJUSTMENT (DECK A, B)

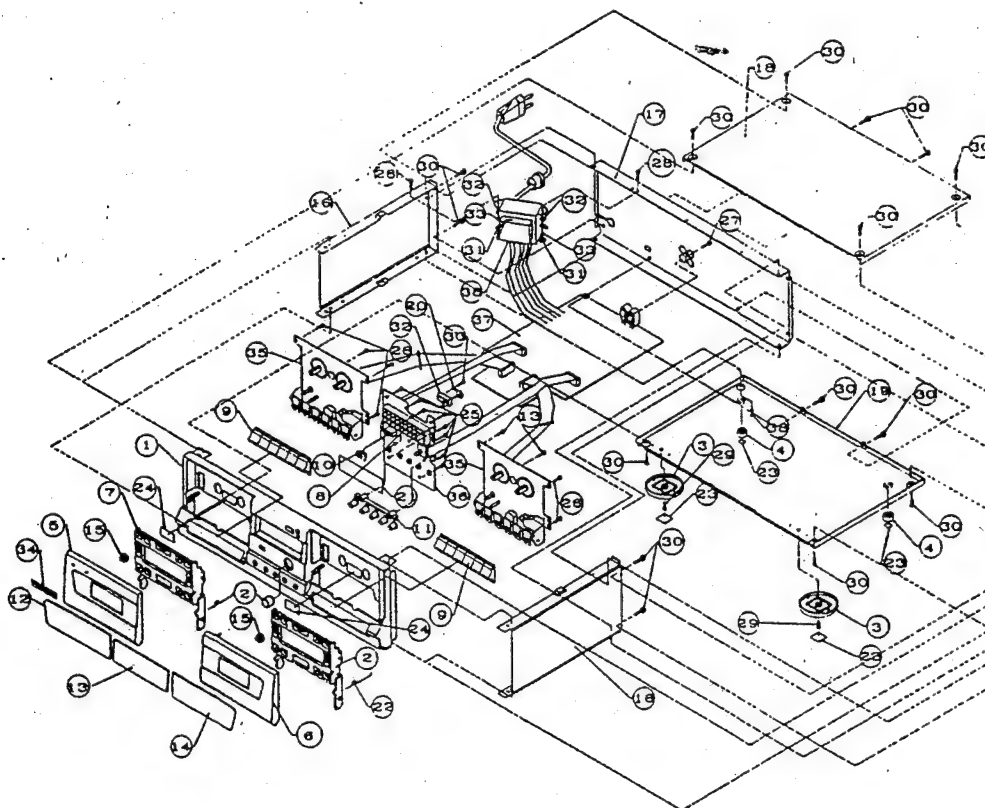
1. Test equipment connection is shown in figure 2.
2. Playback the test tape MTT-111N.
3. Adjust first VR4 (DECK A) and VR2 (DECK B) for high speed ($6000 \pm 60\text{Hz}$).
4. Adjust VR5 (DECK A) and VR3 (DECK B) for normal speed ($3000 \pm 30\text{Hz}$)



WIRING DIAGRAM

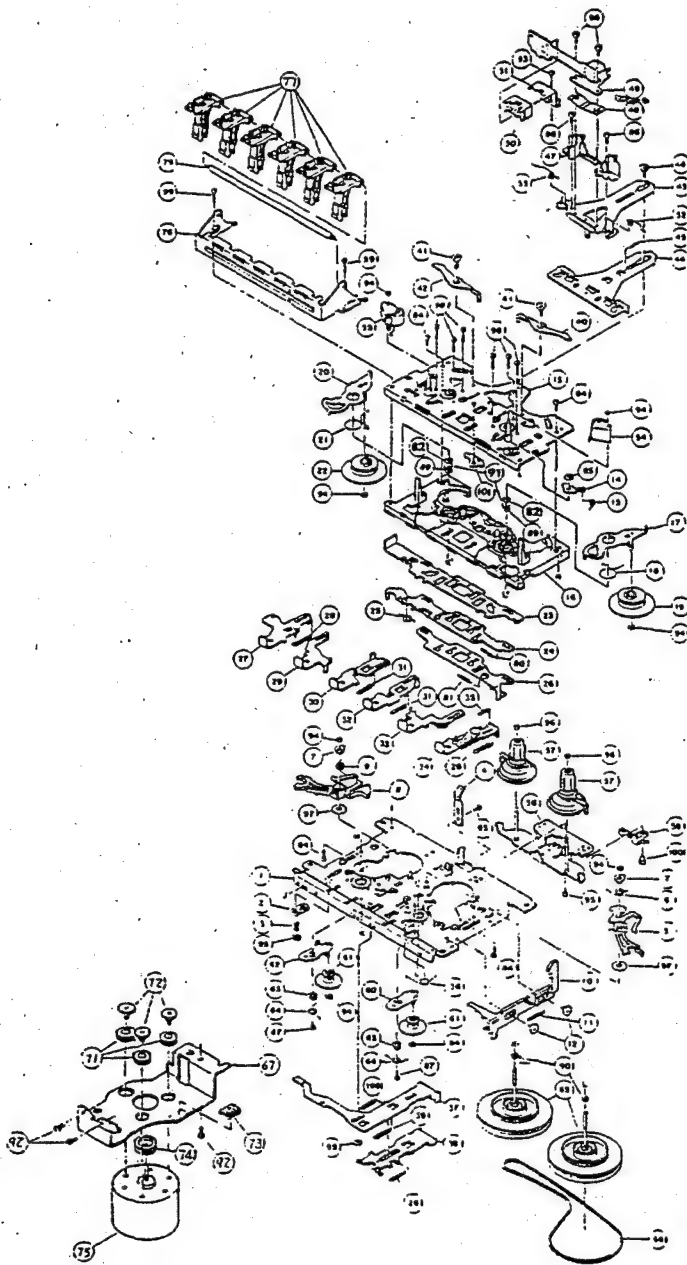


EXPLODED VIEW

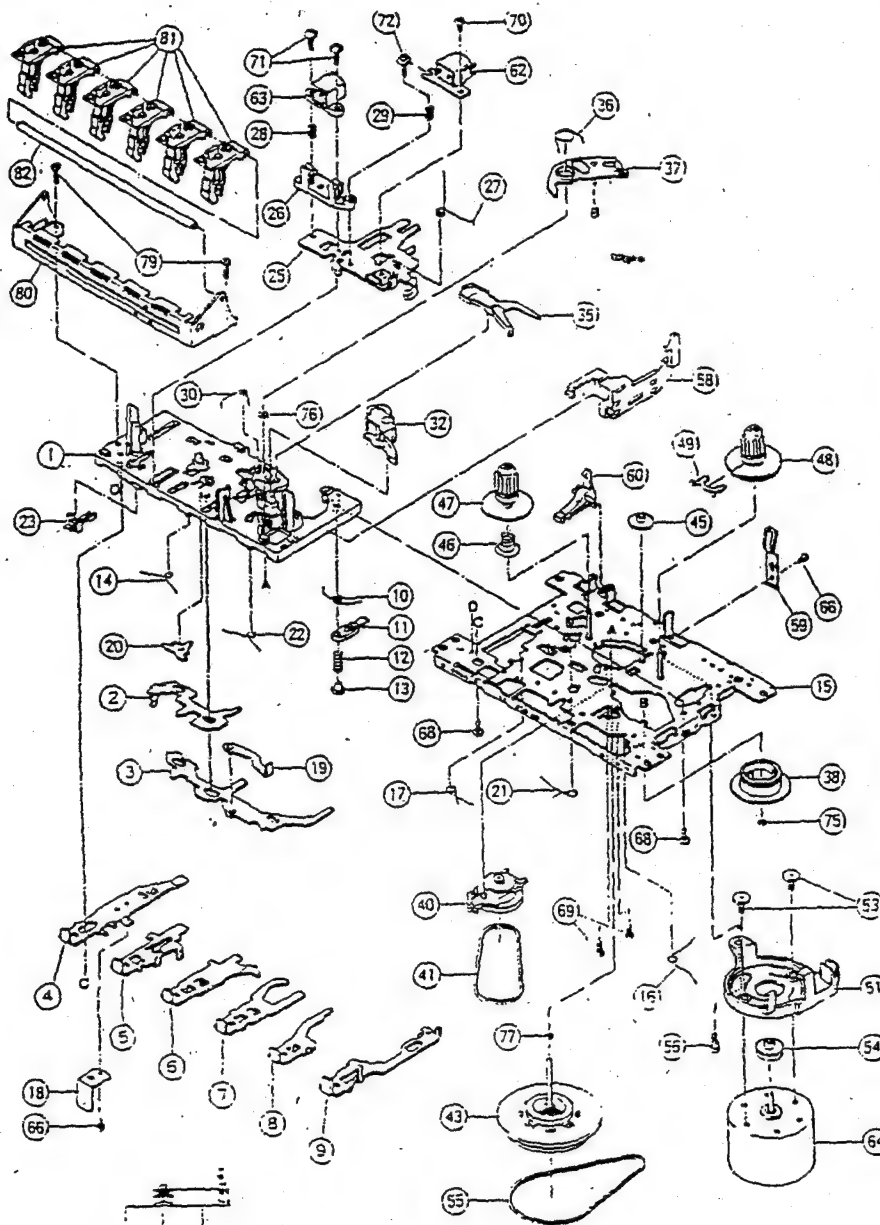


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	7035202103	CASS PANEL (C-155)	1	16	6435110000	SIDE COVER(DECK & AMP)	2
2	7335108000	AMP BAL & CASS REC KNOB	1	17	6335210206	BACK COVER (CASS)	1
3	7935102201	FRONT FOOT (GOLDEN)	2	18	6132210000	TOP COVER (CASS,TUNER,EQ & CD)	1
4	7935105000	REAR FOOT	2	19	6235210000	BOTTOM COVER (CASS,TUNER,CD)	1
5	7235201102	CASS DOOR COVER (A) (C-155)	1	20	5438101000	PCB WASHER NO.1 (FOR COUNTER)	1
6	7235202102	CASS DOOR COVER (B)	1	21	7632201201	CASS LEVEL METER CUTSHEET	1
7	7535202000	CASS BRACKET	2	22	5235201000	CASSETTE DOOR SPRING	2
8	7532201000	CASS LED BRACKET	1	23		RUBBER FOOT 12 X 12 X 2.0MM	4
9	7335204201	CASS KNOB: PAUSE	1	24	8402040000	CASS. DOOR LABEL (9.8 x 19.8mm)	2
	7335204202	CASS KNOB: EJECT	2	25		PA 2.6 X 8 (M3) (2683A)	6
	7335204203	CASS KNOB: FF	2	26		PA 2.6 X 10 (M3) (2610A)	9
	7335204204	CASS KNOB: REW	2	27		PA 3 X 8	1
	7335204205	CASS KNOB: PLAY	1	28	5601300801	BM 3 X 8 (FOR TRANSFORMER)	2
	7335204209	CASS KNOB: PLAY (AUTO REVI	1	29		BTB 3 X 4.5	2
	7335204206	CASS KNOB: AUTO REVERSE	1	30		BTB 3 X 6 (BLACK) (FOR CHASSIS)	16
	7335204207	CASS KNOB: DIRECTION	1	31	5701300253	NUT : M3 (FOR TRANSFORMER)	2
	7335204308	CASS KNOB: REC (RED COLOR)	1	32	5432101000	METAL WASHER D3 X 8 X 1MM	2
10	7335202000	CASS DOLBY KNOB	1	33	5432105000	SPRING WASHER 0.3 (FOR TRANSFORMER)	2
11	7335203000	CASS FUNCTION KNOB	1	34		BRAND NAME	1
12	7435201401	CASS LENS (A) (LIGHT BROWN COLOR)	1	35		CASS MECHANISM	2
13	7435202401	CASS LENS (MIDDLE) (LIGHT BROWN COLOR)	1	36		CASS CONTROL PCB	1
14	7435203401	CASS LENS (B) (LIGHT BROWN COLOR)	1	37		CASS MAIN PCB	1
15	7935201000	CASS GEAR WHEEL	2	38		TRANSFORMER	1

DECK MECHANISM EXPLODED VIEW



No.	PARTS No.	PARTS NAME	QTY
1	1851 01 301	CHASSIS ASSY	1
2	1821 01 15	PAUSE LEVER	1
3	1821 01 16	PAUSE LEVER SPRING	1
4	1829 10 06	PACK SPRING PLATE	1
5	1851 20 01	AUTO LEVER (H)	1
6	1851 20 03	AUTO LEVER (H) SPRING	1
7	1851 20 05	SPRING STOPPER	1
8	1851 20 02	AUTO LEVER (H)	2
9	1851 20 04	AUTO LEVER SPRING (H)	1
10	1851 17 03	EJECT SLIDE LEVER	1
11	1851 17 02	EJECT SLIDE LEVER SPRING	1
12	1821 12 23	P R COLLAR SCREW (A)	3
13	1851 18 303	SUB CHASSIS ASSY	1
14	1851 03 01	TURN OVER ARM	1
15	1851 03 02	TURN OVER SPRING	1
16	1851 02 501	BUTTON BASE ASSY	1
17	1851 05 301	T-GEAR ARM (H) ASSY	1
18	1851 05 04	T-GEAR ARM (H) SPRING	1
19	1851 03 03	T-CAM GEAR (H)	1
20	1851 06 301	T-GEAR ARM (H) ASSY	1
21	1851 06 03	T-GEAR ARM (H) SPRING	1
22	1851 06 02	T-CAM GEAR (H)	1
23	1851 02 17	SLIDE PLATE	1
24	1851 02 301	LOCK ACTUATOR ASSY	1
25	1851 02 20	LOCK RELEASE SPRING	1
26	1851 02 302	SW ACTUATOR ASSY	1
27	1851 02 304	MODE BUTTON ASSY (S)	1
28	1851 02 22	BUTTON LEVER SPRING	3
29	1851 02 32	PLAY BUTTON LEVER (S)	1
30	1851 02 35	FF BUTTON LEVER (S)	1
31	1851 02 24	FF BUTTON LEVER SPRING	2
32	1851 02 34	FF BUTTON LEVER (S)	1
33	1851 02 31	STOP BUTTON LEVER (S)	1
34	1851 02 304	PROGRAM BUTTON LEVER (S)	1
35	1851 02 27	PULL ARM SPRING	1
36	1851 02 21	STOP BUTTON LEVER SPRING	1
37	1851 04 06	RELAY PLATE	1
38	1851 16 02	FF SW PLATE	1
39	1851 04 10	R C SPRING	1
40	1851 18 05	AUTO CONTROL ARM (H)	1
41	1851 18 17	CLAMP COLLAR SCREW	2
42	1851 18 06	AUTO CONTROL ARM (H)	1
43	1851 04 01	HEAD PANEL	1
44	1851 04 02	R C PLATE	1
45	1851 04 09	R C PLATE SPRING	1
46	1851 04 17	HP COLLAR SCREW	1
47	1851 04 03	TAPE GUIDE	1
48	1851 04 05	HEAD SPRING PLATE	1
49	4202 M 33	P HEAD M2.5P-KF243	1
50	6403 02 04	SLIDE SWITCH A86 31 67	1
51	1851 16 01	SWITCH BRACKET	1
52	1851 04 06	PINCH ROLLER SPRING (H)	1
53	1851 04 07	PINCH ROLLER SPRING (H)	1
54	1851 09 501	PINCH ROLLER (H) ASSY	1
55	1851 10 501	PINCH ROLLER (H) ASSY	1
56	1851 11 301	REEL PLATE ASSY	1
57	1851 11 501	REEL ASSY	2
58	6401 01 151	LEAF SWITCH MSW-12902V	1
59			
60	1851 07 301	FF GEAR ARM (H) ASSY	1
61	1851 07 03	FF GEAR	2
62	1851 08 301	FF GEAR ARM (H) ASSY	1
63	1851 07 05	FF GEAR ARM COLLAR	2
64	1851 07 04	FF GEAR ARM SPRING (H)	2
65	1851 12 501	FLYWHEEL ASSY	2
66	1821 12 13	MAIN BELT	1
67	1851 14 09	MOTOR BRACKET	1
68	1851 14 06	P KICK LEVER	1
69	1821 12 15	P KICK LEVER B	1
70			
71	1821 12 36	MOTOR RUBBER	3
72	1821 12 02	M COLLAR SCREW	3
73	1821 12 09	ANTI-VIBRATION FELT	1
74	1851 14 02	MOTOR PULLEY	1
75	302 15 16	MOTOR 1/2HP-5000-2P	1
76	1851 14 04	P KICK LEVER SPRING	1
77	1821 12 07	SPRING LEVER	1
78	1851 11 01	BUTTON FRAME (S)	1
79	1829 10 03	BUTTON LEVER SHAFT	1
80	1851 02 25	LOCK ACTUATOR SPRING	1
81	1851 02 26	SW ACTUATOR SPRING	1
82	9999 00 01	WASHER 1704204	1
83	4P53 20 0321	WEL TAPPING SCREW M2.5 (SPECIAL)	1
84	3074 00 00	P TAPPING SCREW M2.5	1
85	3076 00 00	P WASHER CUT 2 1/2x3/5	3
86	3079 00 00	P TAMS SCREW M2.5	2
87	3079 00 01	TSS 1/2x4	2
88	3999 20 07	SCREW M2.5	2
89	3786 00 00	P WASHER 2x3 5/8 J	1
90	3089 00 00	P WASHER 2 1/2x3/4 J	1
91	3999 03 09	P WASHER 1 1/2x3/4 J	1
92	9120 00 00	P TAPPING SCREW M2.5	1
93	3079 00 01	P WASHER 2 1/2x3/4 J	1
94	3421 00 00	P WASHER CUT 1 1/2x3/4 J	1
95	3079 00 01	P WASHER 1 1/2x3/4 J	1
96	3089 00 00	P WASHER CUT 1 1/2x3/4 J	1
97	9999 00 09	P WASHER 3/8x5/8 J	1
98	3079 00 01	P WASHER 1 1/2x3/4 J	1
99	3999 11 02	CAMERA TAPPING SCREW M2.5	1
100	1181 10 00	TAPPING SCREW M2.5	1
101			

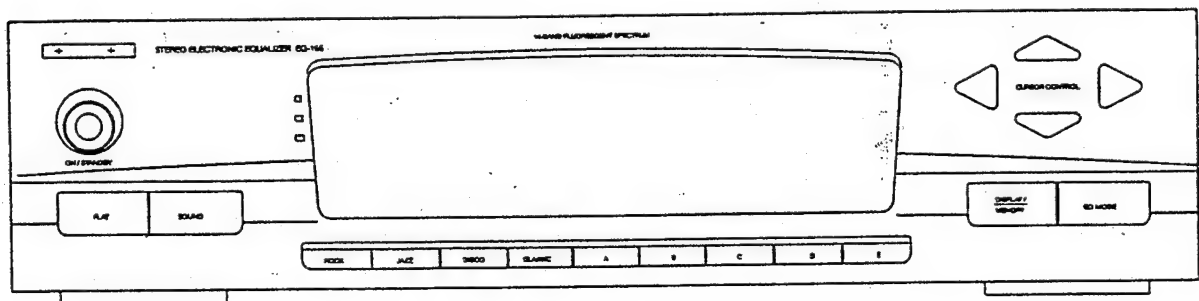


4 PULLEY 压入寸注

NO.	NAME	DESCRIPTION	QTY.
1	BASE ASSY	1921 14 301	1
2	SWITCH ACTUATOR	1921 14 08	1
3	PUSH BUTTON ACTUATOR	1921 14 08	1
4	REC BUTTON LEVER	1921 14 22	1
5	PLAY BUTTON LEVER	1921 14 23	1
6	REW BUTTON LEVER	1921 14 24	1
7	FF BUTTON LEVER	1921 14 25	1
8	STOP BUTTON LEVER	1921 14 26	1
9	PAUSE BUTTON LEVER	1921 14 41	1
10	P CONTROL SPRING	1921 14 13A	1
11	PAUSE LEVER (S)	1921 14 16	1
12	PAUSE LEVER SPRING	1921 14 12	1
13	PAUSE STOPPER	1921 14 11	1
14	BUTTON LEVER SPRING (H)	1921 14 14	1
15	CHASSIS ASSY	1921 01 501	1
16	E ACTUATOR SPRING	1921 14 16	1
17	P.S. LEVER SPRING	1921 14 17	1
18	REC SPRING PLATE	1510 02 02	1
19	E KICK LEVER	1921 01 159	1
20	PR STOPPER	1921 14 20	1
21	REC BUTTON LEVER SPRING	1921 14 21	1
22	BUTTON LEVER SPRING (H)	1921 14 15	1
23	LEAF SWITCH MSW-15411	6401 01 149	1
24			
25	HEAD PANEL	1921 03 12	1
26	HEAD BASE	1921 03 08	1
27	PANEL P SPRING	1921 03 03	1
28	EN SPRING	1921 03 08	1
29	AZIMUTH SPRING	1921 03 07	1
30	M CONTROL SPRING	1921 14 18A	1
31			
32	PRINCH ROLLER ARM ASSY	1921 04 309	1
33			
34			
35	SENSING LEVER	1921 26 04	1
36	GEAR PLATE SPRING	1921 26 05	1
37	GEAR PLATE ASSY	1921 26 501	1
38	CAM GEAR	1921 26 02	1
39			
40	RF CLUTCH ASSY	1921 07 301	1
41	RF BELT	1921 07 03	1
42			
43	FLYWHEEL ASSY	1921 09 303	1
44			
45	FF GEAR	1921 10 70	1
46	BACK TENSION SPRING	1929 10 10	1
47	SUPPLY REEL ASSY	1921 05 304	1
48	TAKE UP REEL ASSY	1921 05 303	1
49	SENSOR	1921 05 06	1
50			
51	MOTOR BRACKET	1921 12 89A	1
52			
53	MOTOR COLLER SCREW	1921 12 02	2
54	MOTOR PULLEY	1921 12 26	1
55	MAIN BELT	1921 09 04	1
56	MB SCREW	1921 12 03	1
57			
58	ELECT SLIDE LEVER	1921 13 02	1
59	PACK SPRING	1929 10 01	1
60	RECORD SAFETY LEVER	1921 10 69	1
61			
62	RP HEAD ASSEMBLY	1921 12 75	1
63	E HEAD LEVER	1921 14 23	1
64	MOTOR ELS-5000-7-B	1921 03 24	1
65			
66	C TAPPING SCREW M2x3	9179 00 00	2
67			
68	P TAPPING BND SCREW M2x3	9679 00 00	2
69	TAPPING SCREW FOR CHASSIS M2x3	9999 18 00	2
70	GRIND SCREW M2x3	9115 00 00	1
71	OSCAP SCREW M2x75	9273 00 00	1
72	AZIMUTH SCREW M2x1	9922 00 00	1
73			
74			
75	P WASHER CUT 12x3.8x0.3	9422 00 00	1
76	P WASHER CUT 14x3.8x0.3	9999 03 13	1
77	P WASHER 2x3.5x0.3	9786 00 00	1
78			
79	TAPPING SCREW FOR CHASSIS M2x3	9999 14 02	2
80	B FRAME (S)	1921 31 08	1
81	OPERATION LEVER	1921 31 07	5
82	BUTTON LEVER SHAFT	1929 31 03	1

SERVICE MANUAL

STEREO ELECTRONIC EQUALIZER

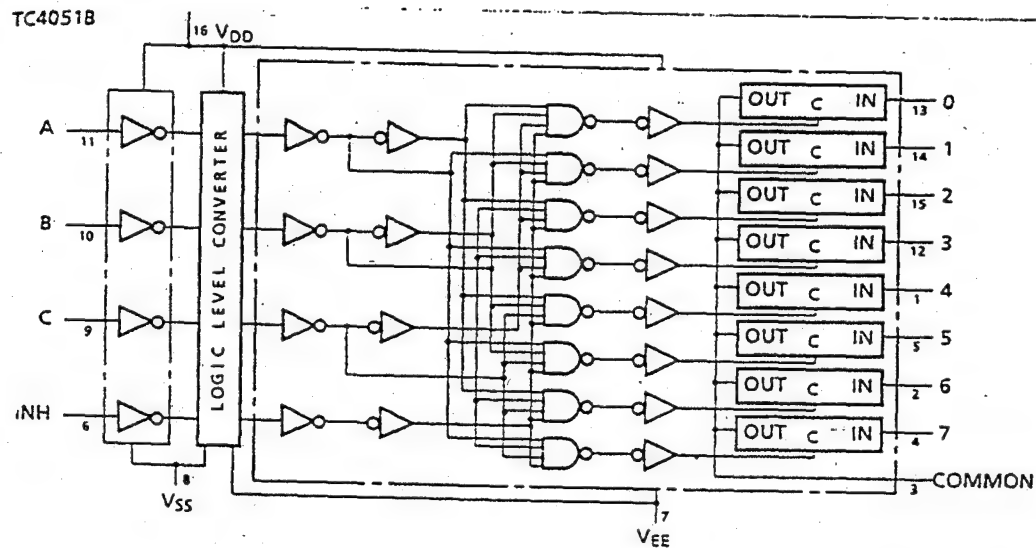


EQ - 155

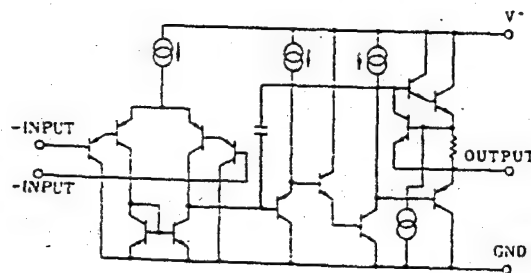
SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields etc.,

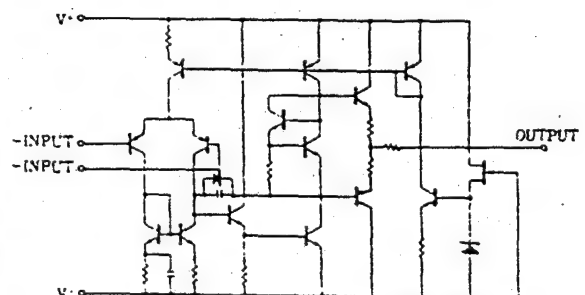
SEMICONDUCTOR INSTRUCTION



TC4051B

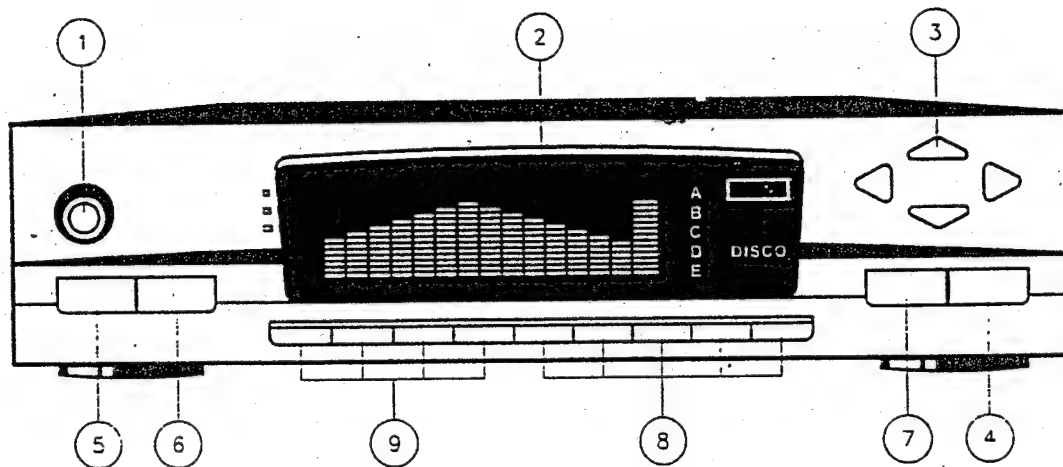


NJM324

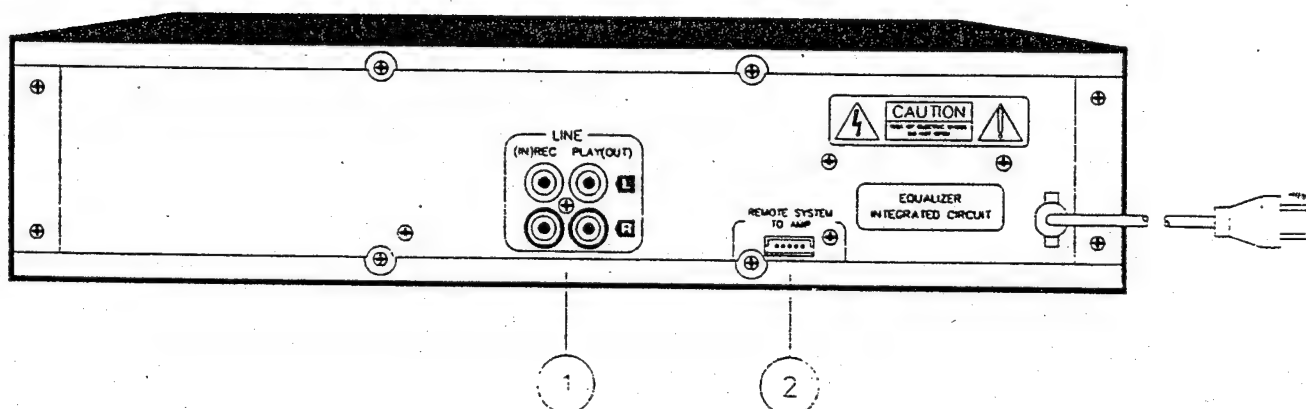


NJM4558

CONTROL FUNCTIONS

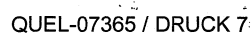


- | | |
|--------------------------------|--------------------------------|
| 1. ON / STANDBY SWITCH | 6. SURROUND SOUND ON / OFF |
| 2. SPECTRUM DISPLAY | 7. DISPLAY / MEMORY MODE SWITC |
| 3. EQUALIZER SETTING | 8. USER PRESET SWITCH (A-E) |
| 4. EQ MODE SWITCH (FINE / ALT) | 9. SURROUND SOUND MODE SWITC |
| 5. EQUALIZER FLAT BUTTON | |

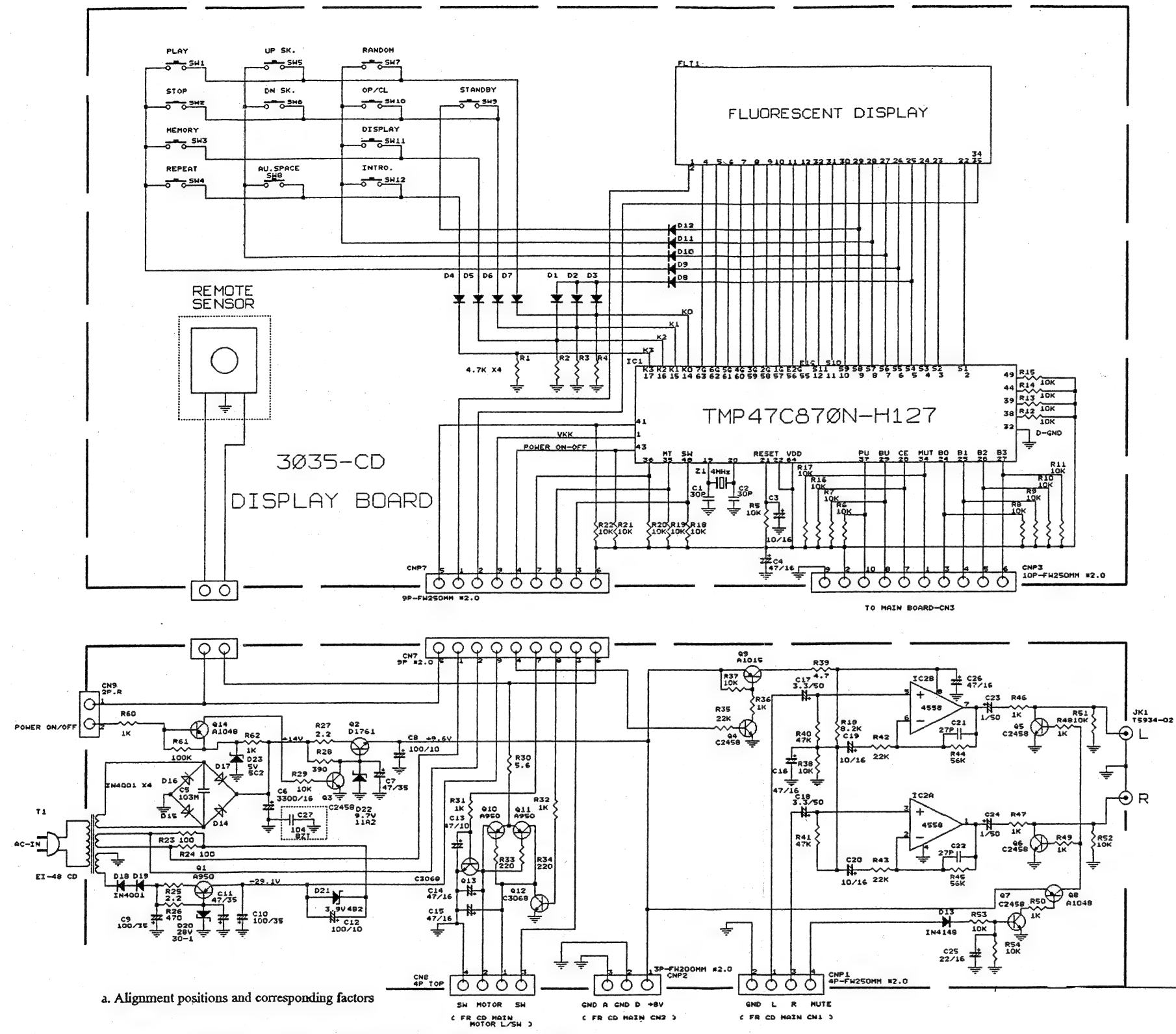


- | | |
|--|--------------------------------------|
| 1. REC (IN) / PLAY (OUT) LINE TERMINAL | 2. EQ TO AMP REMOTE SYSTEM CONNECTOR |
|--|--------------------------------------|

38



Suppl 2



a. Alignment positions and corresponding factors

Our TCD-550/560 series need only one alignment process. This is achieved by fully utilizing the Toshiba's IC TC9236F AUTO-GAIN ADJUSTMENT feature.

The single alignment factor is TRACKING BALANCE. The PCB is provided with four test point to ease this alignment process.

Please check your PCB with following reference;
(Also refer to the attachment Diagram and Drawings.)

Factors	Symbols	Monitor Point
1. TRACKING BALANCE	TBL	VR1 (B100K)
2. RF Output/Eye-pattern	RF	Test point TP1
3. TRACKING ERROR TRIGGER	TERR	Test point TP2,T5
4. TRACKING ERROR SIGNAL	TE	Test point TP3
5. REFERENCE VOLTAGE	Vref	Test point TP4 J127,J105
6. Ground	GND	GND
7. LD switching Transistor Base	LDB	Q1 Base terminal

a-1. In stop mode, with power on and disc in,

First verify the Vref voltage by setting the probe ground to GND and Probe end to Vref/TP4 position illustrated in the attachment.

Vref shall be (in DC);

Minimum	Typical	Maximum
1.95 v	2.1 v	2.25 v

a-2. In stop mode, with power on and disc in,

Check the PCB's Laser Diode driving circuit by verifying the voltage at the point of Base terminal pin of the switching transistor Q1, to monitor either in Laser Diode Deterioration of mechanism or PCB failure.

LD CHECK point voltage shall be (in DC);

Minimum	Typical	Maximum
4.4 v	4.6 v	4.7 v

Then subsequently turn the units to PLAY mode, and observe the same LD CHECK point voltage changes to fall in the range of;

Minimum	Typical	Maximum
4.0 v	4.2 v	4.3 v

If the observation found any abnormal voltage transition on this test point, it is likely that servo-control circuit block may have faulty components or workmanship.

Or it is also likely the mechanism pickup's laser diode is damaged or deteriorated.

a-3. Change the units to PLAY mode and change probe ground to Vref/TP4 point (also at Jumper J127, J105, or J104).
(Probe ground to Vref shall be maintained for following inspection and alignment processes.)

a-4. TRACKING BALANCE

Set the scope to VOLT/DIV = 0.2v, TIME/DIV = 2msec.
Probe to the TE/TP3 point as illustrated.

Carefully adjust the scope GND to centre on GND.

Use the user-designed Function PCB with the CD Control Switches.
By tapping the SKIP(+) Key or SKIP(-) key for a short while, CD Main PCB returns the TRACKING ERROR signal which can be monitored at the designated Testpoint.

Observe the rendered TRACKING ERROR signal and verify the Positive DC Envelope level and negative DC Envelope level are equal (so called A=B alignment) and the DEVIATION shall fall in the range;

Minimum	Typical	Maximum
0 m V	+/- 5 mV	+/-10 mV

If not, adjust to maintain the range with carefully moving VR1.

NB: TRACKING ERROR TRIGGER (Testpoint TP2) is provided for another way of the same adjustment for CHECKER JIG use - optional for customers inspection and alignment station setup :

Instead of using customers' function PCB. switch for Tracking Error signal monitoring, TRACKING ERROR signal can be generated by shorting the Testpoint TP2 to the CD main PCB's Vref (Testpoint TP4) point for a short while, equivalent Error signal can be monitored. And sometime, this way of alignment may be preferred to obtain the easier and steadier reading and adjustment of Tracking balance.

4. Completion and unit restoration

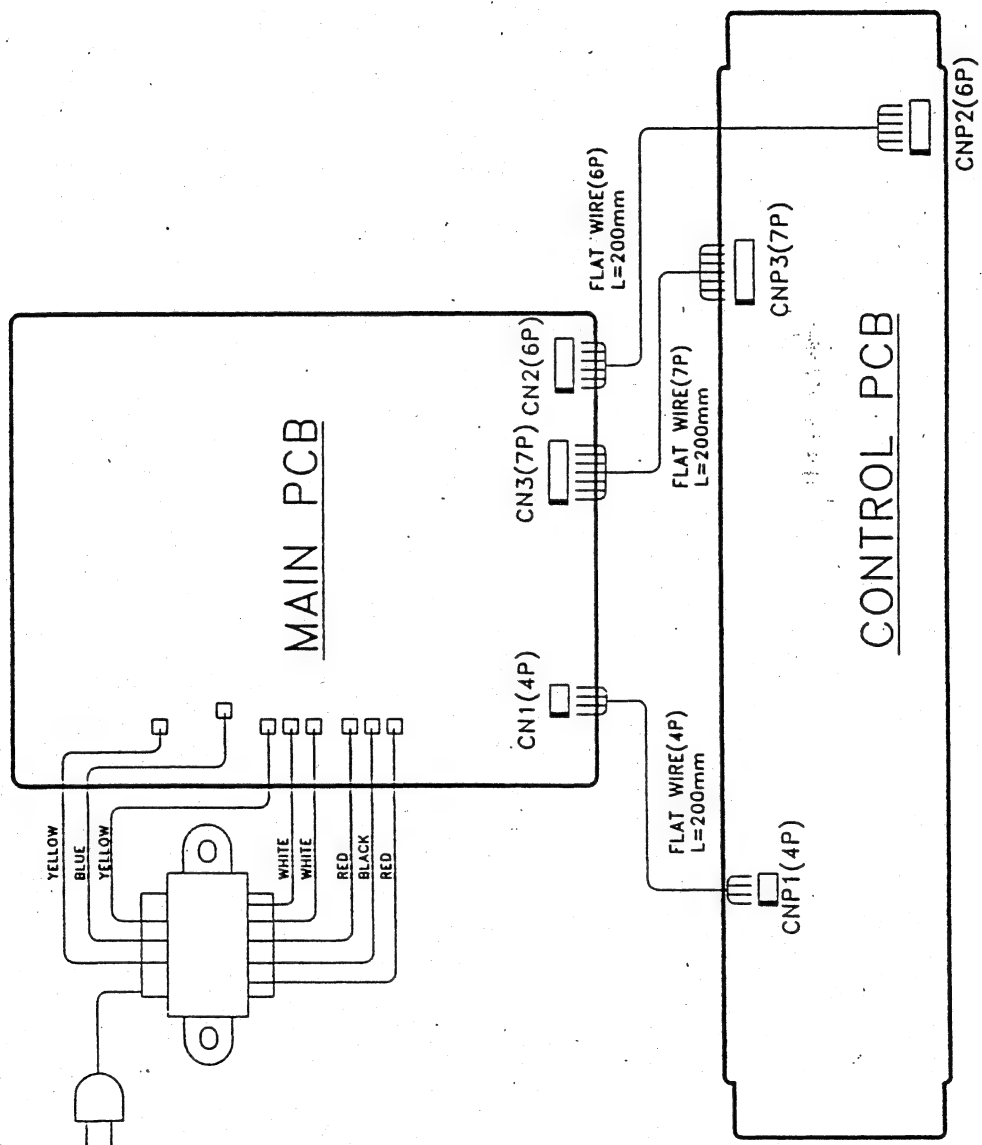
After the successful completion of inspection and alignment, please restore PCB and mechanism to suitable store or transit condition with same care and provision described above for overall inspection and alignment processes.

Summary

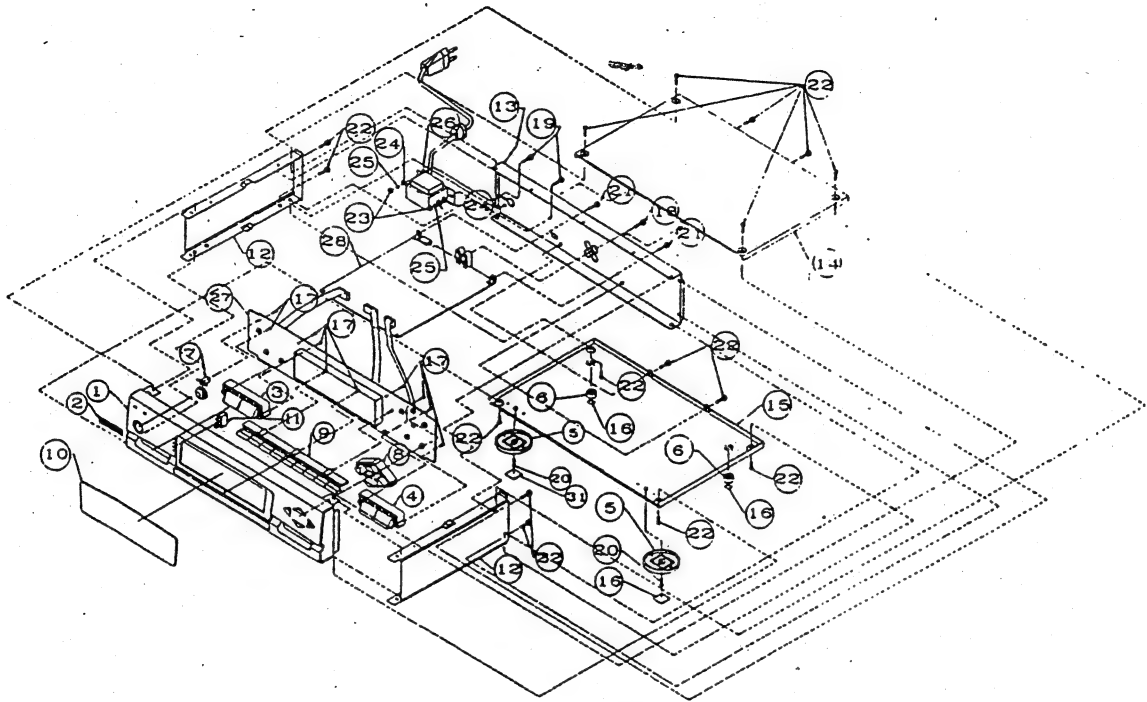
The items herein mentioned shall be referred to other technical data and documents supplied to you separately.

And should you have any query for further details and in another specific circumstances, our sales personnel are pleased to find better suggestion with referencing the matter to our technical staffs and engineers.

WIRING DIAGRAM

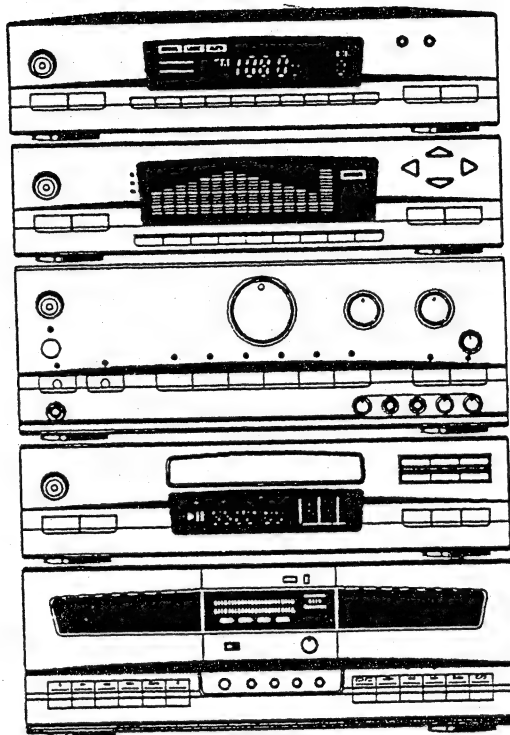


EXPLODED VIEW



ITEM	PART NO.	DESCRIPTION
1	703S402103	EQ PANEL (EQ-155) (NO SURR)
2		BRANDNAME
3	733S105108	COMMON KNOB (SOUND)
4	733S105109	COMMON KNOB (EQ MODE)
5	793S102201	FRONT FOOT (GOLDEN)
6	793S106000	REAR FOOT
7	733S301000	POWER KNOB (TU, EQ)
8	733S401000	EQ SETTING KNOB (CURSOR)
9	733S402103	EQ USER KNOB (ROCK)
10	743S401401	EQ LENS (PURPLE)
11	743S402000	EQ INDICATED LENS (TRANSPARENT)
12	6432310000	SIDE COVER (CD, EQ & TUNER)
13	633S410106	BACK COVER (EQ)
14	6132210000	TOP COVER (CASS, TUNER, EQ & CD)
15	623S410000	BOTTOM COVER (EQ)

QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	16		RUBBER FOOT 12 X 12 X 2.0MM	4
1			SCREW	
1	17		PA 2.5 X 8 (M3) (2683A)	11
1	18		PA 3 X 8	1
2	19	5601300801	BM 3 X 8 (FOR TRANSFORMER)	2
2	20		BTB 3 X 4.5	2
1	21	5602300602	BTB 3 X 6 BC	4
1	22		BTB 3 X 6 (BLACK) (FOR CHASSIS)	16
1	23	5701300253	NUT : M3 (FOR TRANSFORMER)	2
1	24	5432101000	METAL WASHER 03 X 8 X 1MM (FOR TRANSFORMER)	2
1	25	5432105000	SPRING WASHER 03 (FOR TRANSFORMER)	2
2	26		TRANSFORMER	1
1	27		CONTROL PCB	1
1	28		MAIN PCB	1



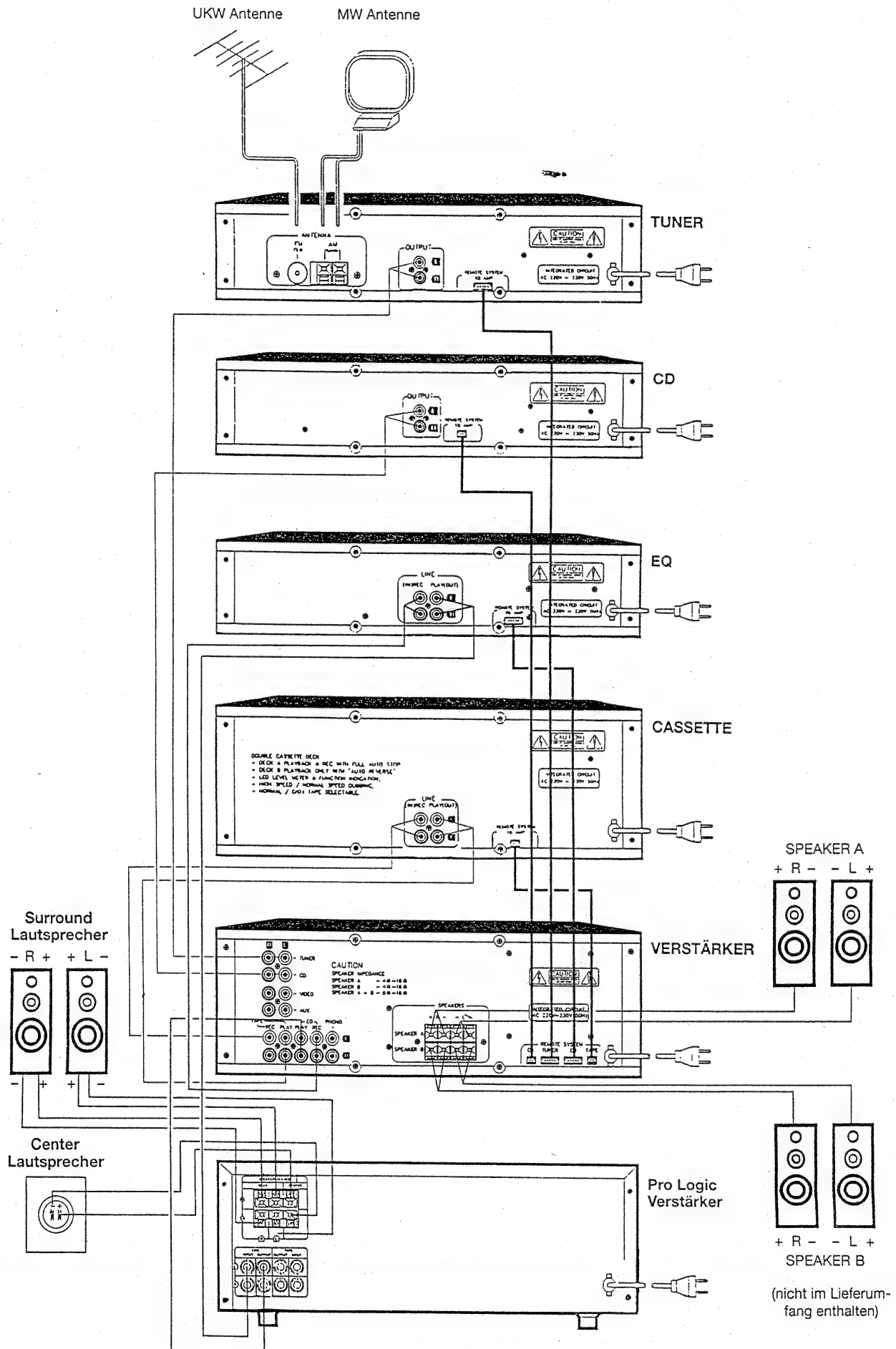
UTS-Nr.: 999 QUELLE
Best.Nr.: 0679936/01
Ger.Bez.: UNIV.STEREO-TURM

GKz: G GERAET
WGT: 659 KOMPLETTE STEREO-TUERME
KD-Sektor: R RUNDFUNK
BaumNr.: 00 KEIN DIAGNOSEBAUM VORHANDEN
Klassierung: STK STEREOKOMBINATION
IFW-FehlerGru.: 205 RDF.,VERST.,TB.,PHONO,CD,CB
Type/Privileg/Universum.Nr MODELL 3030
Beschreibung DOLBY-PROLOGIG
VK-Preis: 1498.00

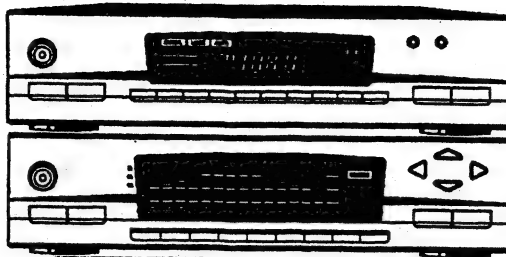
Serviceart: 01 QUELLE-TKD
Garantie fuer Kunden 06 Monate
Sondervereinbarungen: 0 SIEHE SERVICEART

Garantiereparatur 9999999 QUELLE

**Aufstell- und Anschlußmöglichkeiten für den kompletten
Dolby Logic - HiFi Baustein Turm Best.-Nr. 067.993**



2.AUSFÜHRUNG EQUALIZER TUNER



VTC-CD-155 (T/EQ/CD/C/M)

UTS-Nr.: 999 QUELLE
Best.Nr.: 0679936/01
Ger.Bez.: UNIV.STEREO-TURM

GKz: G GERAET
WGT: 659 KOMPLETTE STEREO-TUERME
KD-Sektor: R RUNDFUNK
BaumNr.: 00 KEIN DIAGNOSEBAUM VORHANDEN
Klassierung: STK STEREOKOMBINATION
IFW-FehlerGru.: 205 RDF.,VERST.,TB.,PHONO,CD,CB
Type/Privileg/Universum.Nr MODELL 3030
Beschreibung DOLBY-PROLOGIC
VK-Preis: 1498.00

Serviceart: 01 QUELLE-TKD
Garantie fuer Kunden 06 Monate
Sondervereinbarungen: 0 SIEHE SERVICEART

Garantiereparatur 9999999 QUELLE

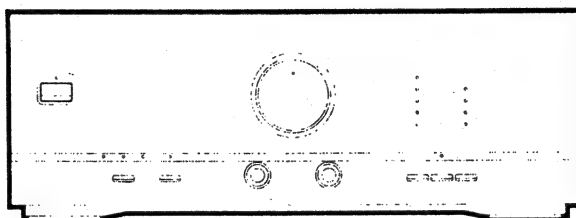
Fehler:

- 1 EQUALIZER KEINE ANZEIGE
A: DER EQ IST IM SIGNALWEG VOR DEN DOLBY-VERST.ZU SCHALTEN
- 2 SURROUND BOXEN KEIN SIGNAL
U: DIE DOLBY-MATRIX KANN KEIN HINTERGRUNDSIGNAL AUS EINEM MONO-SIGNAL (Z.B. RDF) BILDEN.
- 3 SCHALTPLAENE UNLESERLICH
ES GIBT EINE ERGAENZUNG ZUR TU AB ENDE SEP.95
- 4 ANSCHLUSS DES SURROUNDVERSTAERKERS
SIEHE TI 27/95
- 5 HAUPTLAUTSPRECHER KEIN TON
A: MONITORTASTE AM PROLOGIC-VERSTAERKER ENTRIEGELN
- 6 FUNKTIONSSTOERUNGEN
BEI KOMPONENTEN DER ANLAGE KOENNEN SCHLECHTE LOESTELLEN ZU FUNKTIONSSTOERUNGEN FUEHREN.
- 7 GERAETE BRUMMEN BZW.DEFEKT NACH VERBINDUNG SYS.FB
F: SYSTEMFERNBEDIENUNGSKABEL STECKER VERPOLT
SIEHE TI 40/95 !!!
- 8 EQ KEINE FUNKTION
F: K.F. DISPLAY ZEIGT VERSTUEMMELTE ZEICHEN
U: KONDENSATOREN C119,C120 (30PF) FEINSCHLUSS
- 9 BEI TUNERBETRIEB KEINE BEDIENUNG MOEGLICH.
U: Q8/9/10/201 AUS TOLERANZ,BLOCKIEREN PROZESSOR
A: AUSTAUSCHEN

universum. SERVICE
MANUAL

DPL-155

PROLOGIC AMPLIFIER



Best.Nr.: 1057926/01

Ger.Bez.: UNIV.VERSTAERKER

GKz: G GERAET
WGT: 653 STEREO-EINZELBAUST. BAUSTEINE-SET
KD-Sektor: R RUNDUNK
BaumNr.: 00 KEIN DIAGNOSEBAUM VORHANDEN
Klassierung: STG STEREOG., TUNER, VERST., STEUER
IFW-FehlerGru.: 205 RDF., VERST., TB., PHONO, CD, CB
Type/Privileg/Universum.Nr V 3030
Beschreibung DOLBY-PROLOGIC
VK-Preis: 699.00

Serviceart: 01 QUELLE-TKD
Garantie fuer Kunden 06 Monate
Sondervereinbarungen: 0 SIEHE SERVICEART
Garantiereparatur 9999999 QUELLE

TECHNICAL SPECIFICATION

PREAMPLIFIER (When surround is "OFF")

Channel separation 70dB
Frequency Response 10Hz - 60KHz (-3dB)
S/N Ratio 80dB

AMPLIFIER

1. When surround is "ON"

• 1KHz continuous output 3ch - 35W (8ohm)
• 3 channel system 0.5%

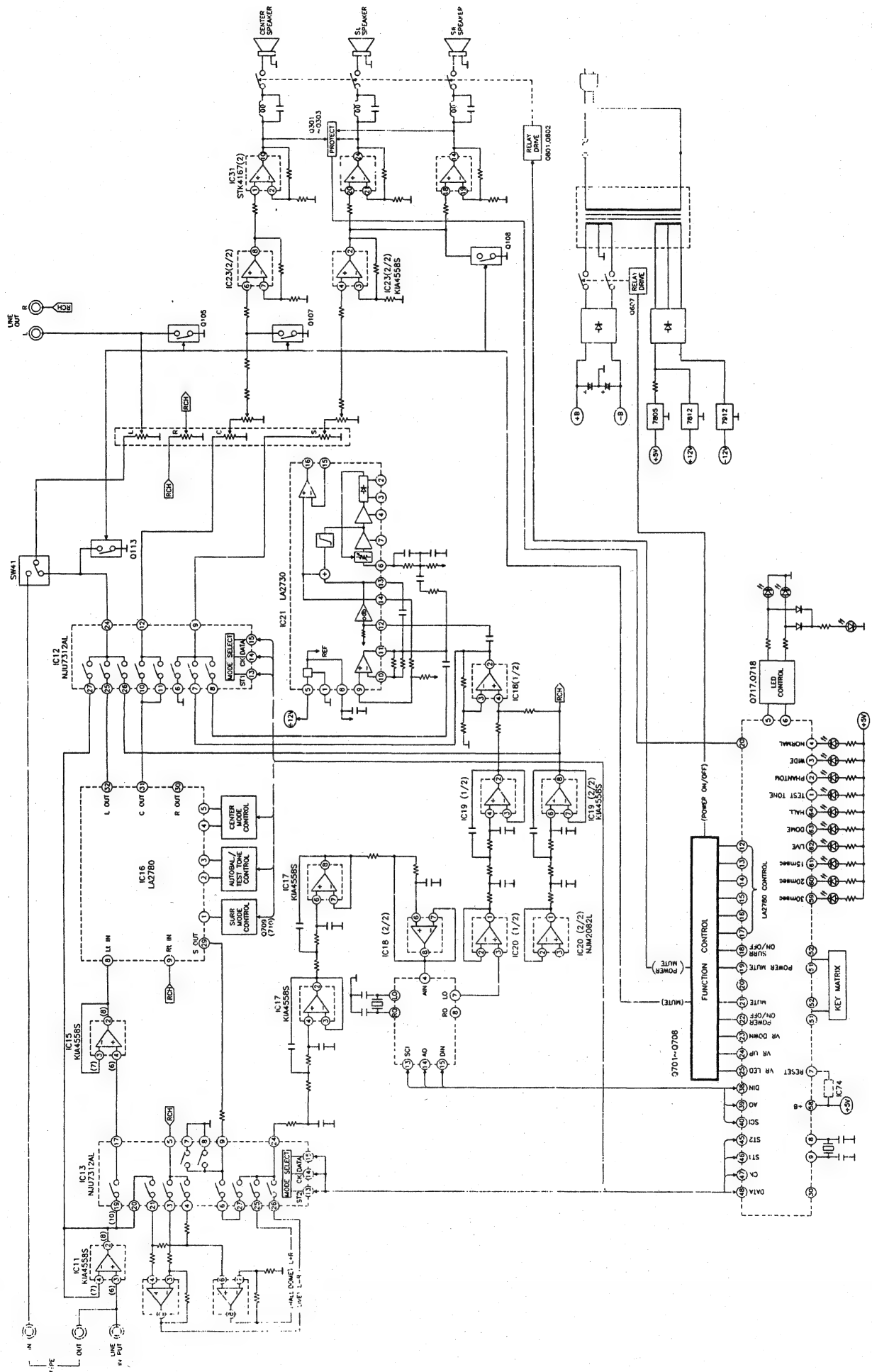
2. When Dolby Prologic is "ON"

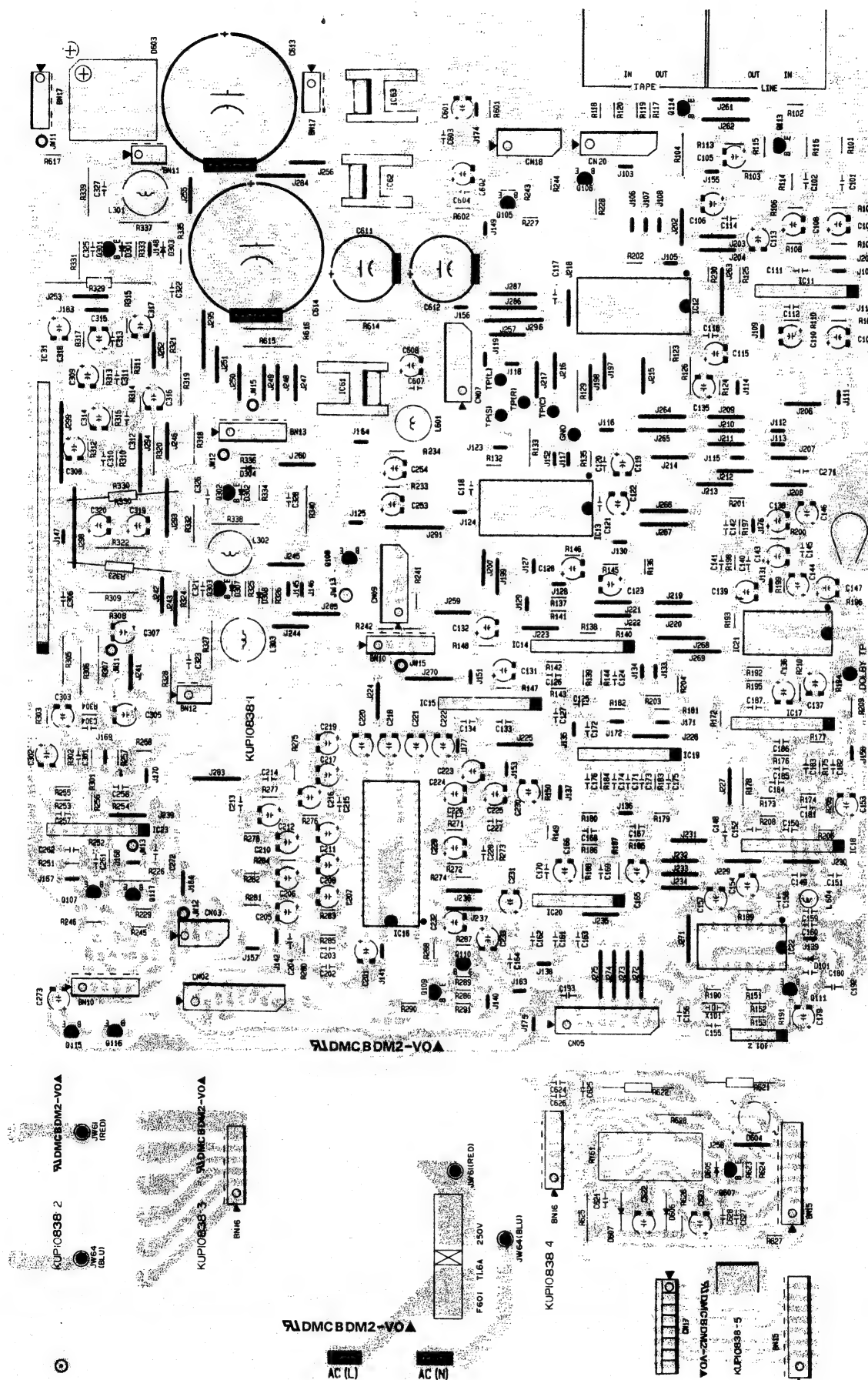
• Frequency Response
Left, Right, Center 50Hz - 60KHz (-3dB)
Rear 100Hz - 6KHz (-3dB)
• S/N Ratio (CCIR/ARM Filter)
Left, Right, Center 75dB
Rear 70dB

GENERAL

Power Consumption 250W
Power Supply AC230V, 50Hz
Dimensions (W · H · D) 360 · 136 · 300mm
Weight 5.8Kg

■ BLOCK DIAGRAM





ANAM 1063A(NEC:μ PD75104GF)μ

NO	SYMBOL	I/O	TEST TONE LED
1	P41	I/O	TEST TONE LED
2	P40	I/O	PHANTOM LED
3	P53	I/O	WIDE LED
4	P52	I/O	NORMAL LED
5	P51	I/O	3 STEREO LED
6	P50	I/O	PRO LOGIC LED
7	RESET	I/O	RESET
8	X2	O	X' TAL OSCILLATOR TERMINAL
9	X1	I	X' TAL OSCILLATOR TERMINAL
10	P63	I/O	
11	P62	I/O	
12	P61	I/O	
13	P60	I/O	
14	P73	I/O	LA 2780 IC CONTROL
15	P72	I/O	
16	P71	I/O	
17	P70	I/O	
18	P83	I/O	SURROUND ON/OFF
19	P82	I/O	POWER MUTE
20	P81	I/O	
21	P80	I/O	MUTE
22	P93	I/O	POWER ON/OFF
23	P92	I/O	
24	P91	I/O	
25	P90	I/O	VOLUME LED
26	Vss		GND
27	P13/INT3	I	
28	P12/INT2	I	
29	P11/INT1	I	PROTECTOR INPUT
30	P10/INT0	I	
31	PTH 03	I	
32	PTH 02	I	
33	PTH 01	I	
34	PTH 00	I	
35	T10	I	
36	T11	I	
37	P23	I/O	
38	P22/PCL	I/O	YM7128 CONTROL, DIN (DATA INPUT)
39	P21/PT01	I/O	YM7128 CONTROL, AO (Address INPUT)
40	P20/PT00	I/O	YM7128 CONTROL, SCI (DATA SHIFT CLOCK INPUT)
41	P03/SI	I	
42	P02/SO	I/O	
43	P01/SCK	I/O	
44	P00/INT4	I	
45	P123	I/O	NJU7312L CONTROL, STROBE 2
46	P122	I/O	NJU7312L CONTROL, STROBE 1
47	P121	I/O	NJU7312L CONTROL, CLOCK
48	P120	I/O	NJU7312L CONTROL, DATA
49	P133	I/O	
50	P132	I/O	
51	P131	I/O	KEY OUTPUT
52	P130	I/O	KEY OUTPUT
53	P143	I/O	KEY INPUT
54	P142	I/O	KEY INPUT
55	P141	I/O	KEY INPUT
56	P140	I/O	KEY INPUT
57	NC		
58	Vcc		+5V POWER SUPPLY
59	P33	I/O	DELAY TIME LED (SHORT)
60	P32	I/O	DELAY TIME LED (MIDDLE)
61	P31	I/O	DELAY TIME LED (LONG)
62	P30	I/O	LIVE LED
63	P43	I/O	DOMED LED
64	P42	I/O	HALL LED

LA2780(SANYO:DOLBY PRO LOGIC DECODER)

LA2780 PIN VOLTAGE

			PIN NO			
			Pin 1	Pin 2	Pin 3	
DOLBY PROLOGIC	TEST TONE	OFF	1/2 V _{cc}	H	H	L ch
		ON	GND	H	L	C ch
				L	H	R ch
				H	H	S ch
3 STEREO	TEST TONE	OFF	V _{cc}	H	H	L ch
		ON	GND	L	L	C ch
				H	L	R ch
				L	H	
OTHER SURROUND			1/2 V _{cc}	L	L	
SURROUND OFF			H	L	L	

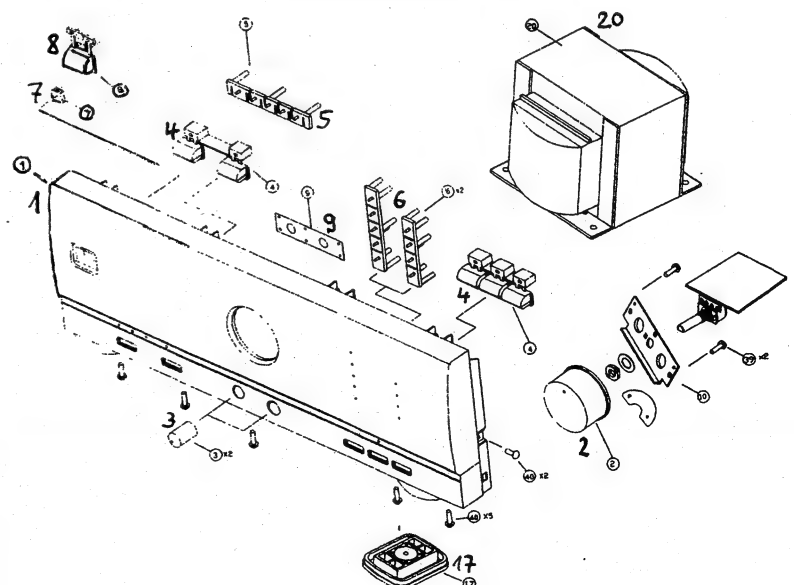
DOLBY PROLOGIC	CENTER MODE	Pin 4	Pin 5
	NORMAL	L	L
	WIDE	L	H
	PHANTOM	H	L
3 STEREO	NORMAL	L	L
	WIDE	L	H

V_{cc}=5V H=5V L=0V

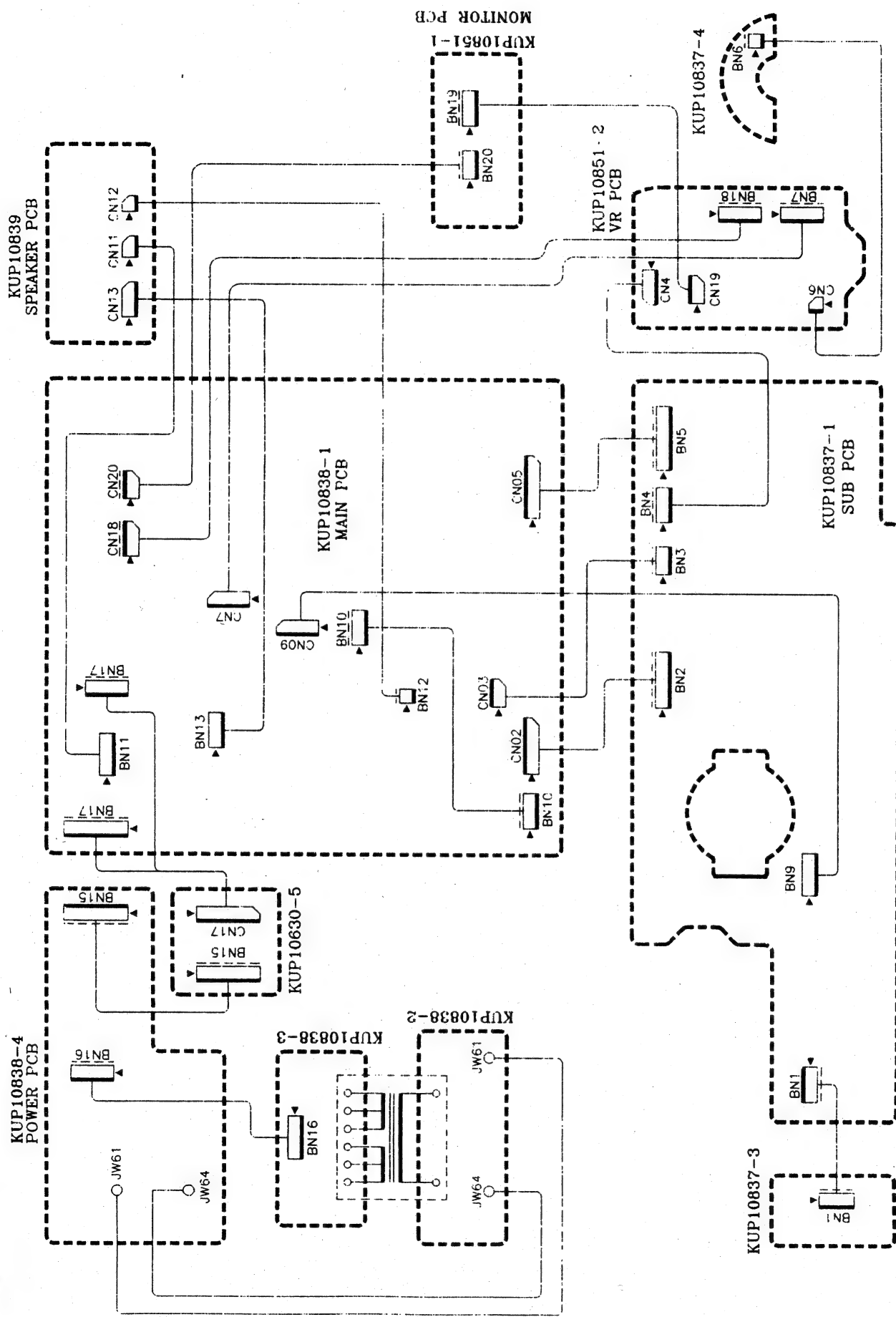
YM7128B (YAMANA:DIGITAL DELAY)

NO	SYMBOL	I/O	
1	V _{cc}		+5V POWER SUPPLY
2	AV _{cc}		+5V POWER SUPPLY
3	CH	O	SAMPLE/HOLD CAPACITOR TERMINAL
4	AIN	I	ANALOG SIGNAL INPUT TERMINAL
5	DV	O	REFERENCE VOLTAGE OUTPUT
6	/TI		
7	LO	O	L CHANNEL OUTPUT
8	RO	O	R CHANNEL OUTPUT
9	AV _{ss}		GND
10	V _{ss}		GND
11	XO	O	X' TAL OSCILLATOR TERMINAL
12	XI	I	X' TAL OSCILLATOR TERMINAL
13	SCI	I	DATA SHIFT CLOCK INPUT
14	AO	I	Address/data INPUT
15	DIN	I	DATA INPUT
16	/IC	I	Initial CLEAR

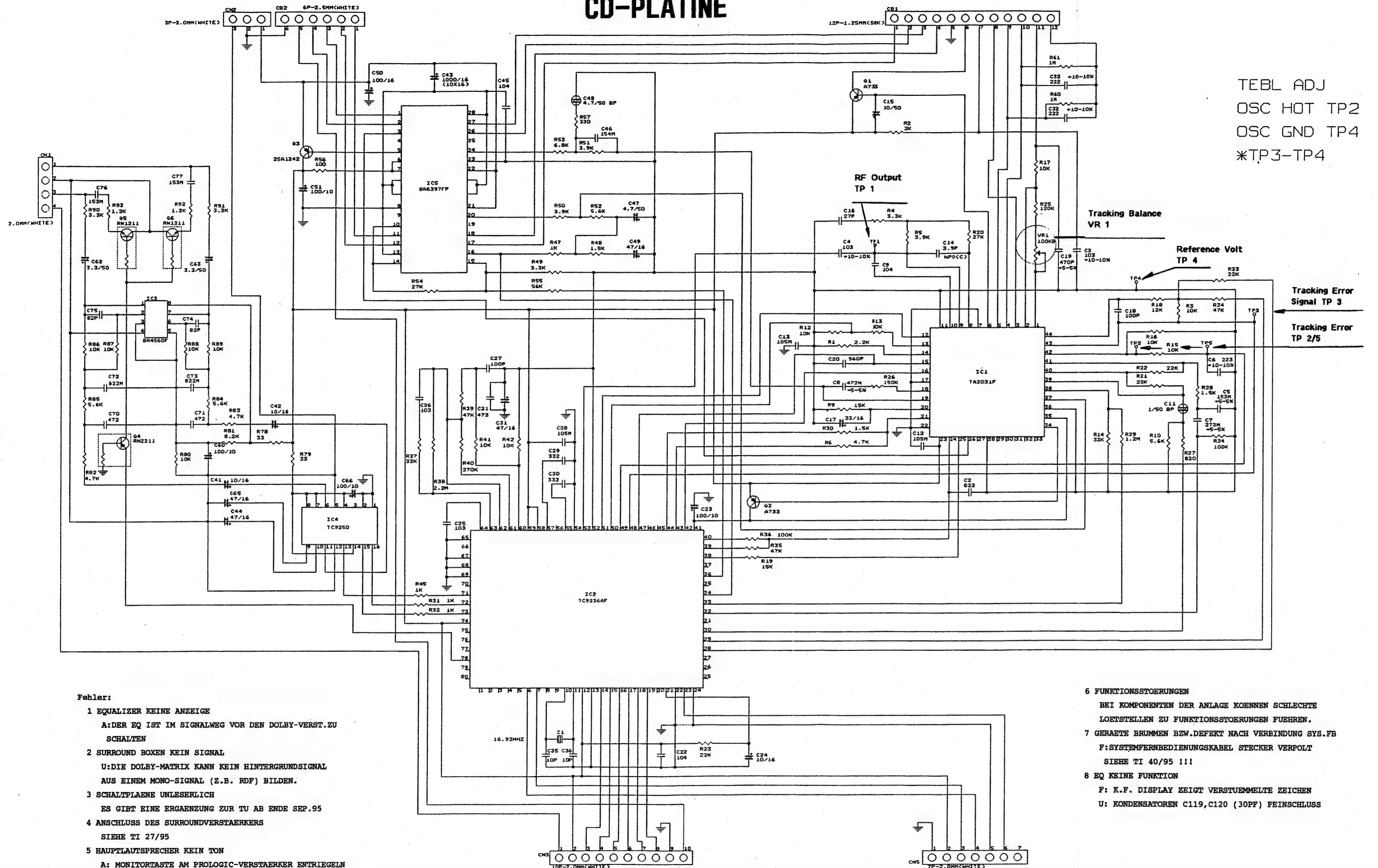
EXPLOSION



■ WIRING DIAGRAM



CD-PLATINE



Fehler:

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6 FUNKTIONSSTOERUNGEN

BEI KOMPONENTEN DER ANLAGE KOENNEN SCHLECHTE LOETSTELLEN ZU FUNKTIONSSTOERUNGEN FUEHREN.

7 GERAETE BRUMMEN BZW. DEFEKT NACH VERBINDUNG SYS.FB

F: SYSTEMFERNBEDIENUNGSKABEL STECKER VERPOLT
SIEHE TI 40/95 !!!

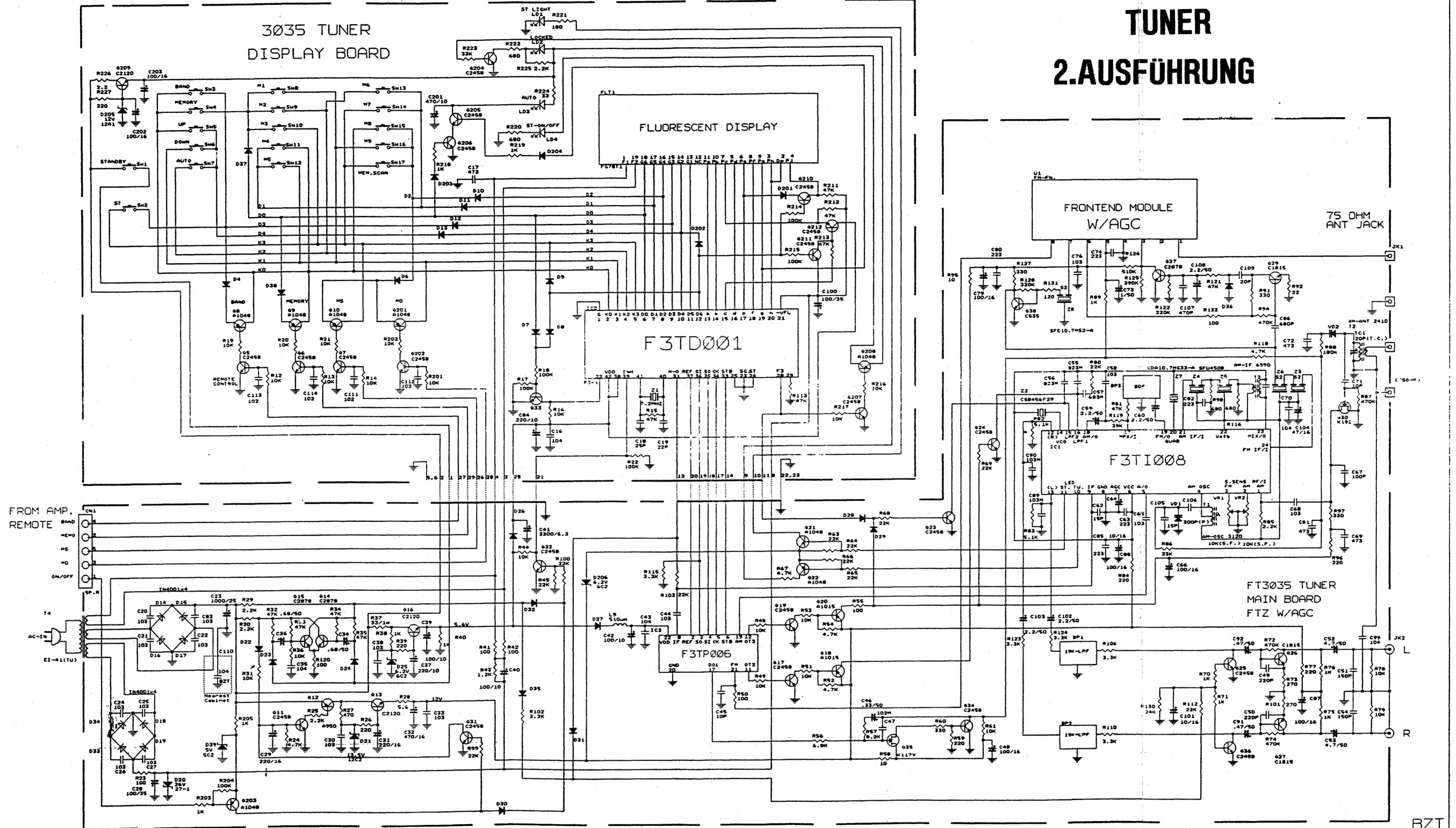
8 EQ KEINE FUNKTION

F: K.F. DISPLAY ZEIGT VERSTUEMMELTE ZEICHEN
U: KONDENSATOREN C119, C120 (30PF) FEINSCHLUSS

TEBL ADJ
OSC HOT TP2
OSC GND TP4
*TP3-TP4

3035 TUNER DISPLAY BOARD

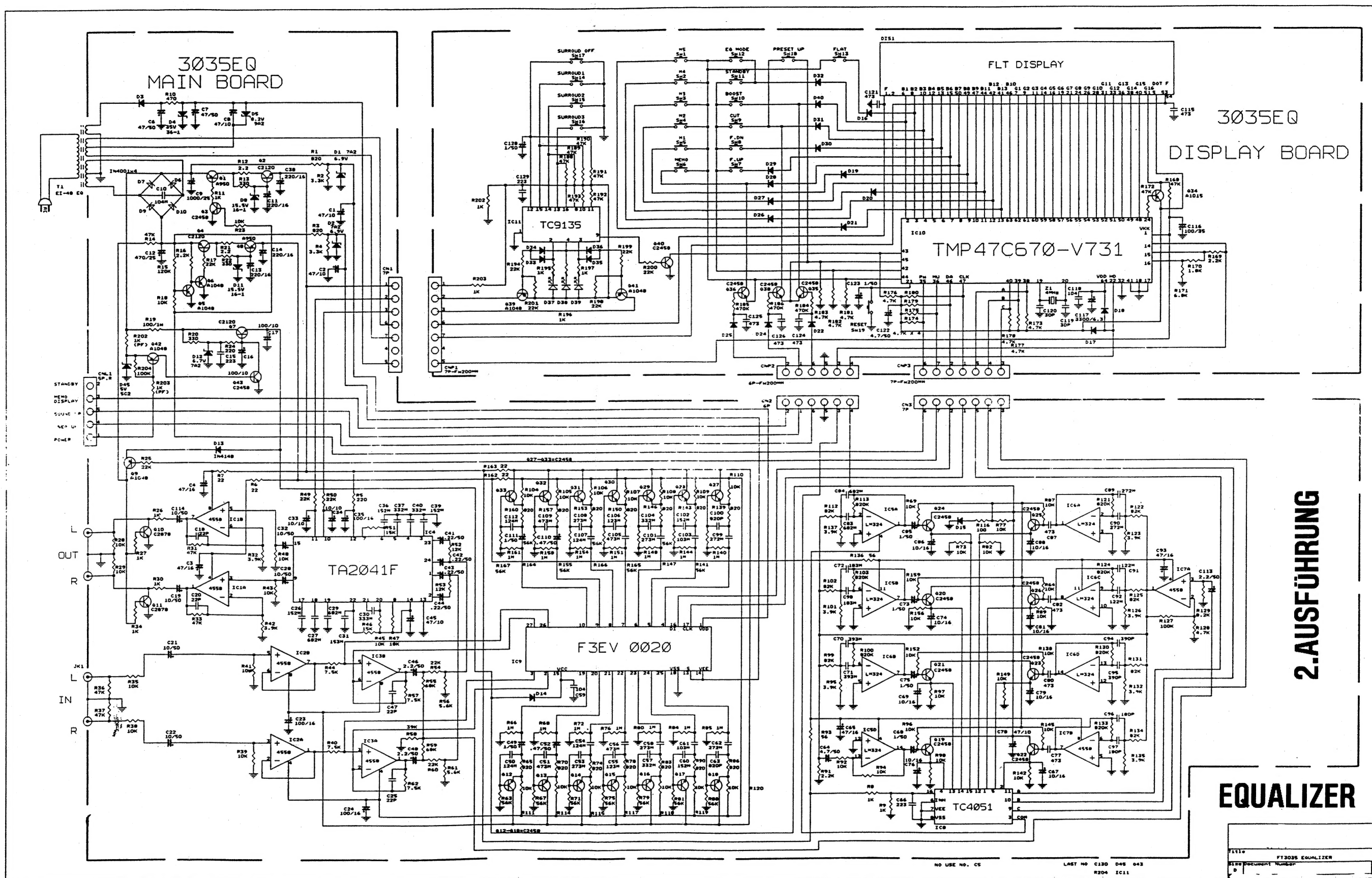
TUNER 2.AUSFÜHRUNG



LAST NO: QPS C203 CN1 D306 FLT1
IC3 R5 L9 Q212 R227
SM17 T4 TC1 U1 VD2
VR2 Z8

FT3035 TUNER-BTZ (AGC) M/FC781
REV 73
1.07

BZT

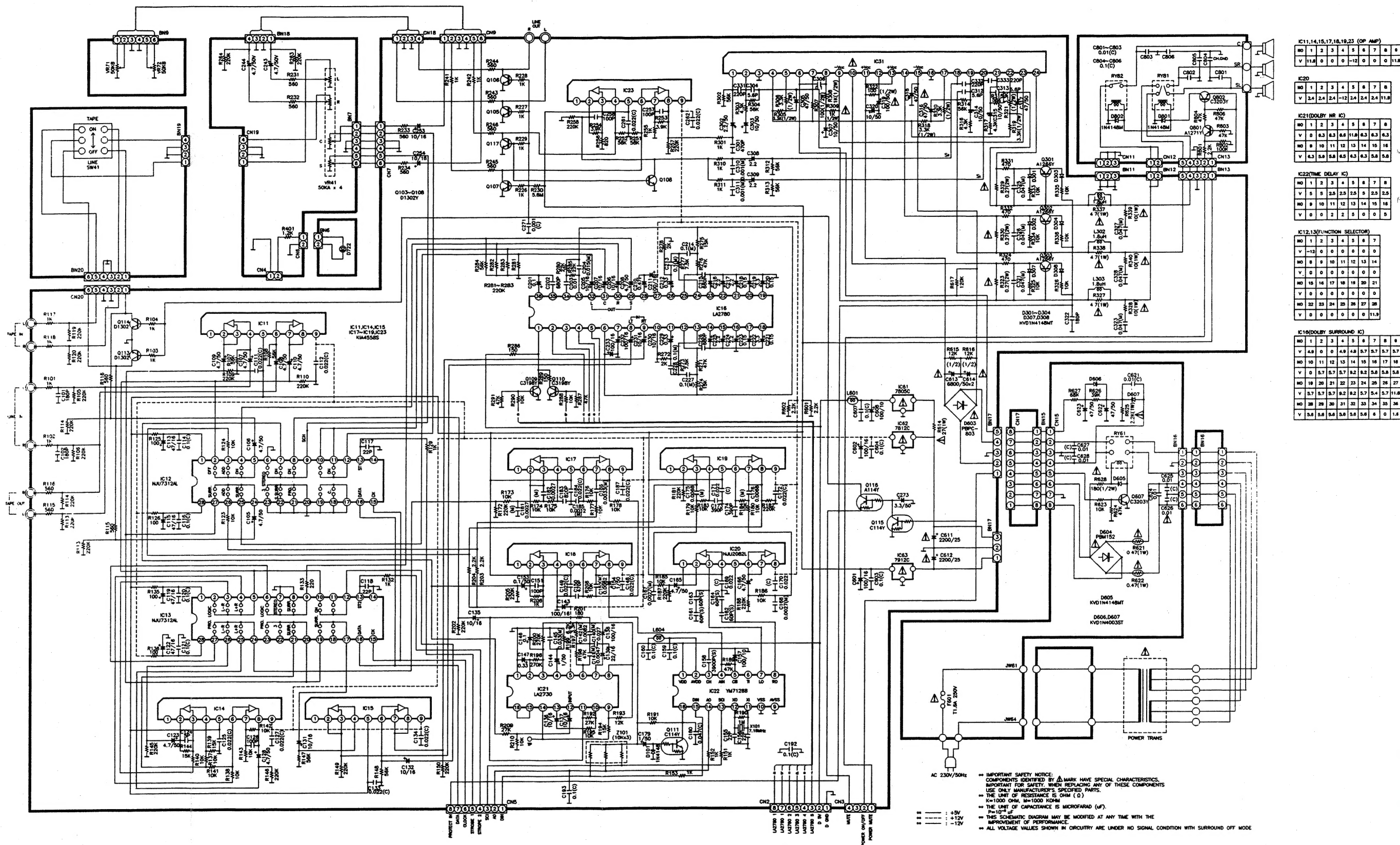


2.AUSFÜHRUNG

EQUALIZER

SCHEMATIC DIAGRAM (MAIN)

Suppl 4



IC11,14,15,17,18,19,23 (OP AMP)	1	2	3	4	5	6	7	8
V	11.8	0	0	0	-12	2.4	2.4	11.8

IC20	1	2	3	4	5	6	7	8
V	2.4	2.4	2.4	-12	2.4	2.4	2.4	11.8

IC21(DOLBY NR IC)	1	2	3	4	5	6	7	8
V	9	8.3	8.3	8.6	11.8	8.3	8.3	8.3
V	9	10	11	12	13	14	15	16
V	8.3	5.8	5.8	6.5	8.3	8.3	5.8	5.8

IC22(TIME DELAY IC)	1	2	3	4	5	6	7	8
V	5	5	2.5	2.5	2.5	5	2.5	2.5
V	9	10	11	12	13	14	15	16
V	0	0	2	2	5	0	0	0

IC12,13(FUNCTION SELECTION)	1	2	3	4	5	6	7	8
V	-12	0	0	0	0	0	0	0
V	0	0	0	0	0	0	0	0
V	18	16	17	18	19	20	21	
V	0	0	0	0	0	0	0	
V	32	33	34	35	36	37	38	
V	0	0	0	0	0	0	11.8	

IC16(DOLBY SURROUND IC)	1	2	3	4	5	6	7	8
V	4.8	0	0	4.8	4.8	5.7	5.7	5.7
V	10	11	12	13	14	15	16	17
V	0	5.7	5.7	5.7	8.2	8.2	5.8	5.8
V	18	20	21	22	23	24	25	26
V	5.7	5.7	5.7	8.2	8.2	5.7	5.4	5.7
V	38	39	40	41	42	43	44	45
V	5.8	5.8	5.8	5.8	5.8	5.8	6	1.8

■ SCHEMATIC DIAGRAM (SUB)

